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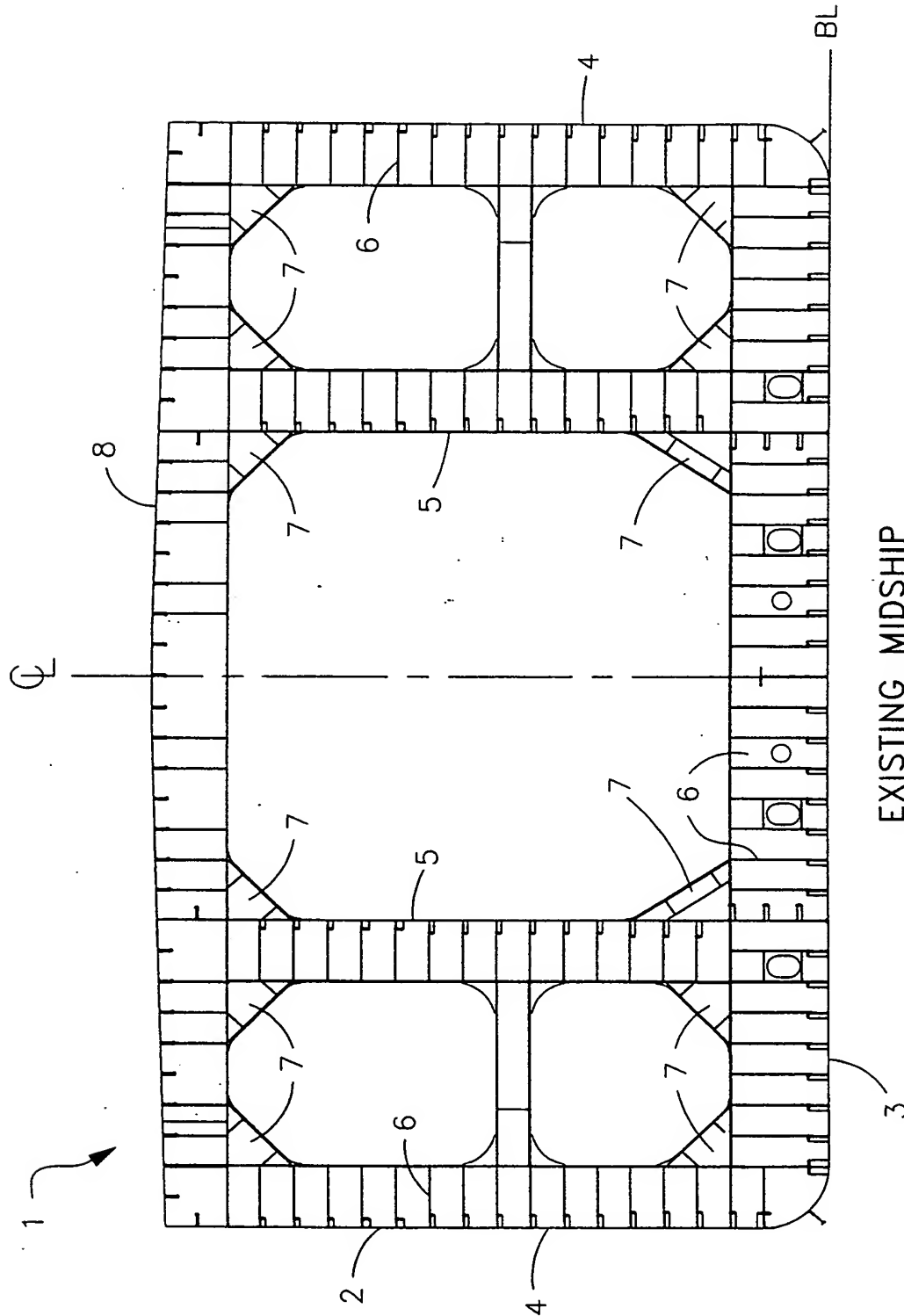


FIG. 1  
 (PRIOR ART)

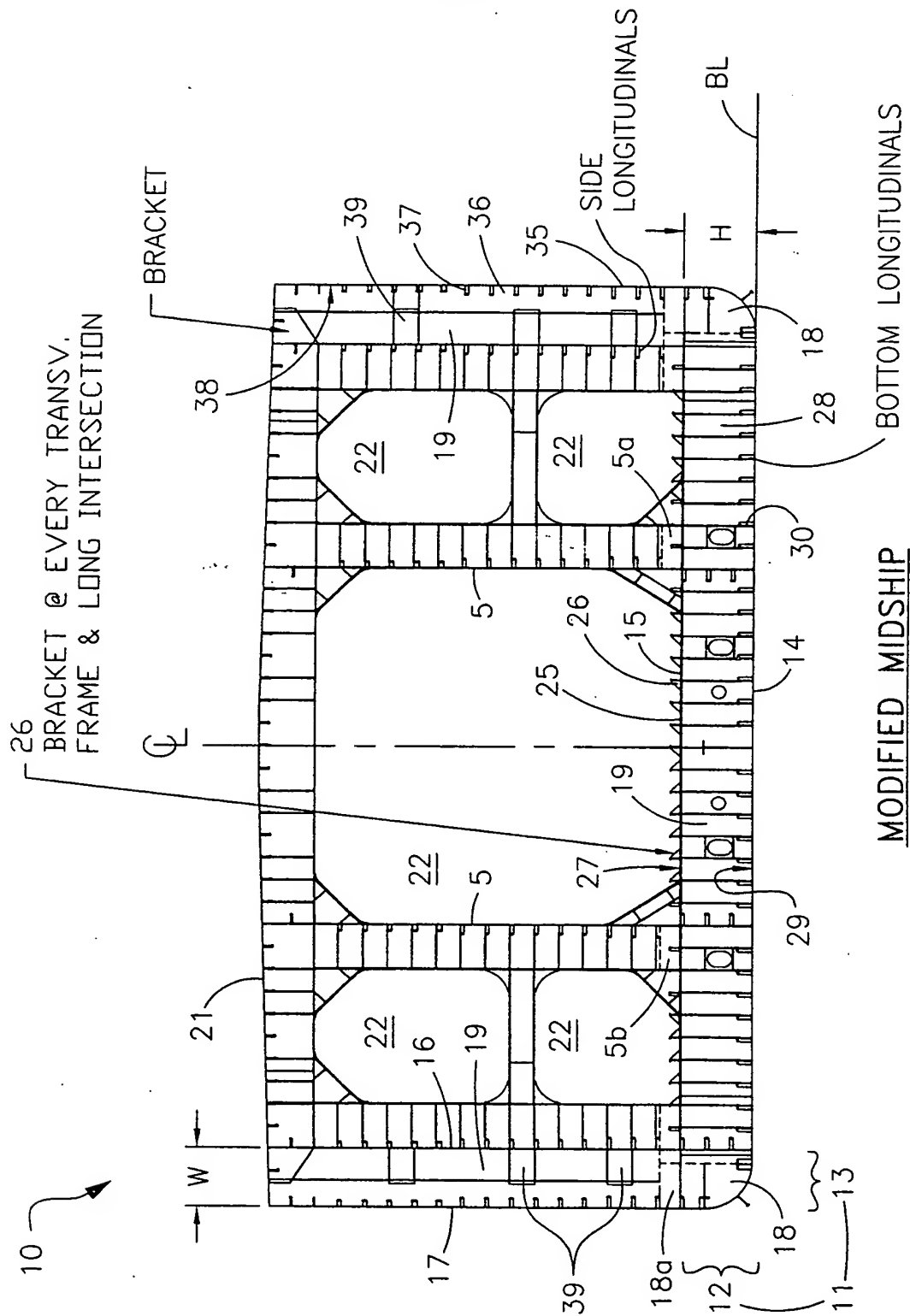
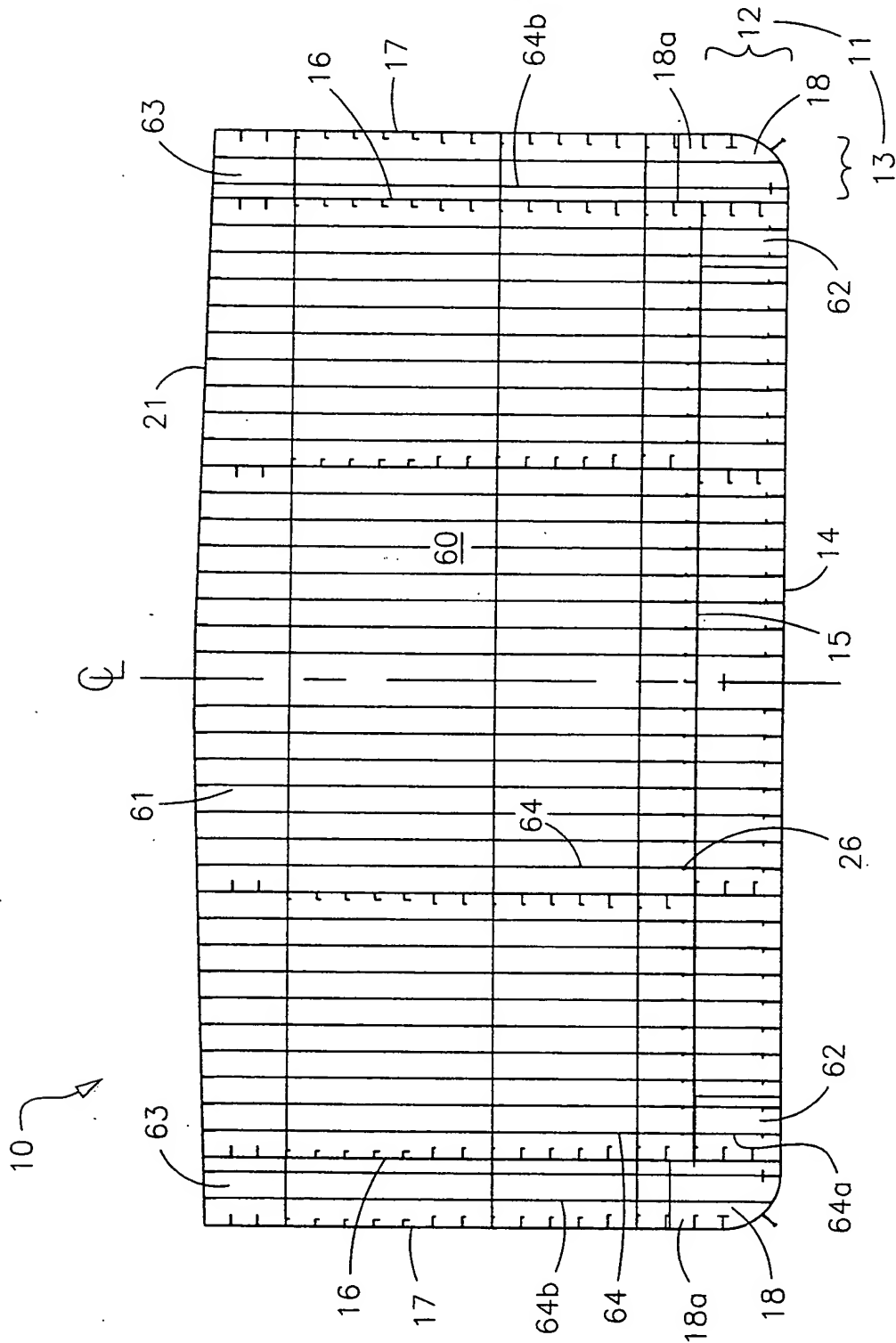


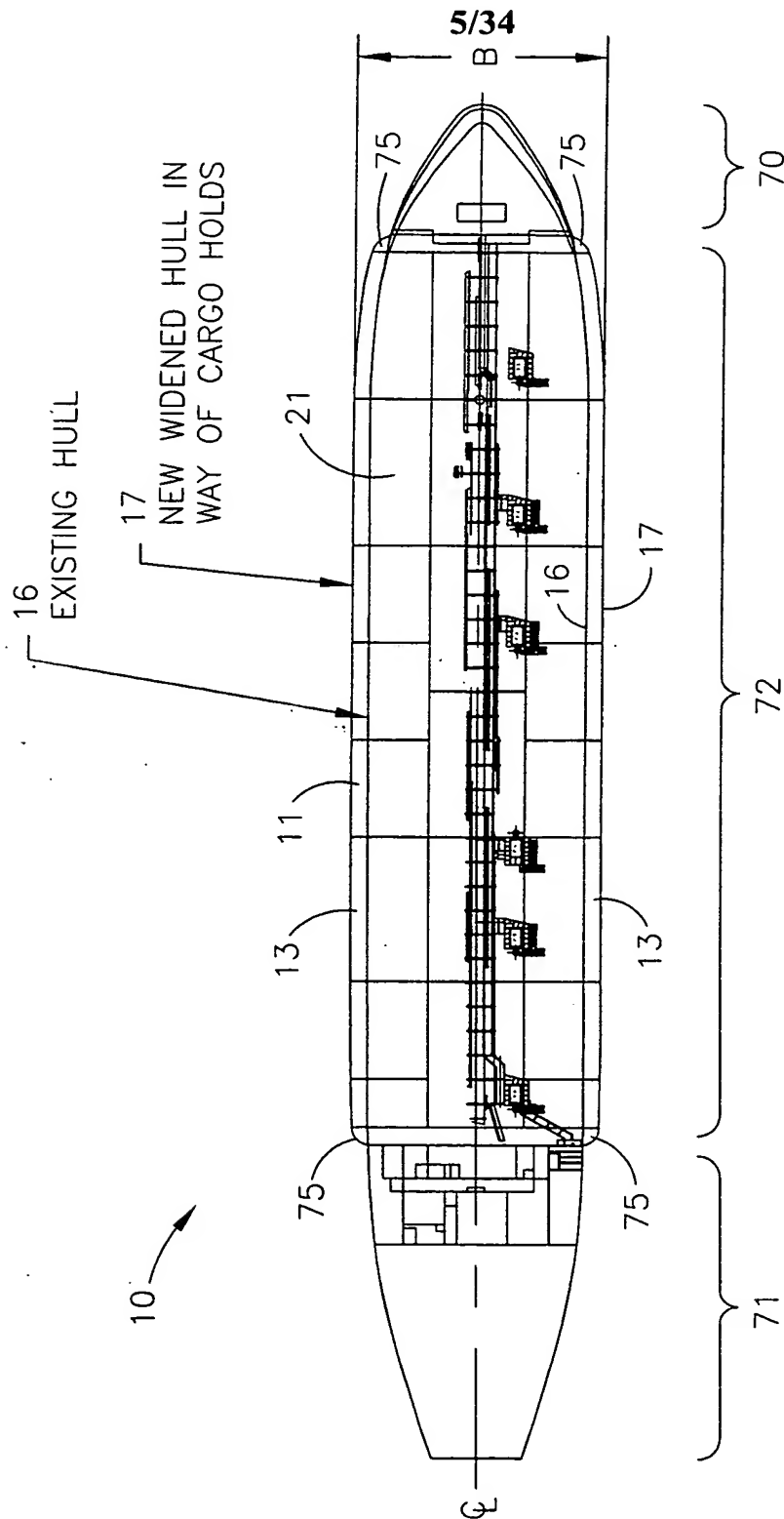
FIG. 2



MODIFIED BULKHEAD

FIG. 3

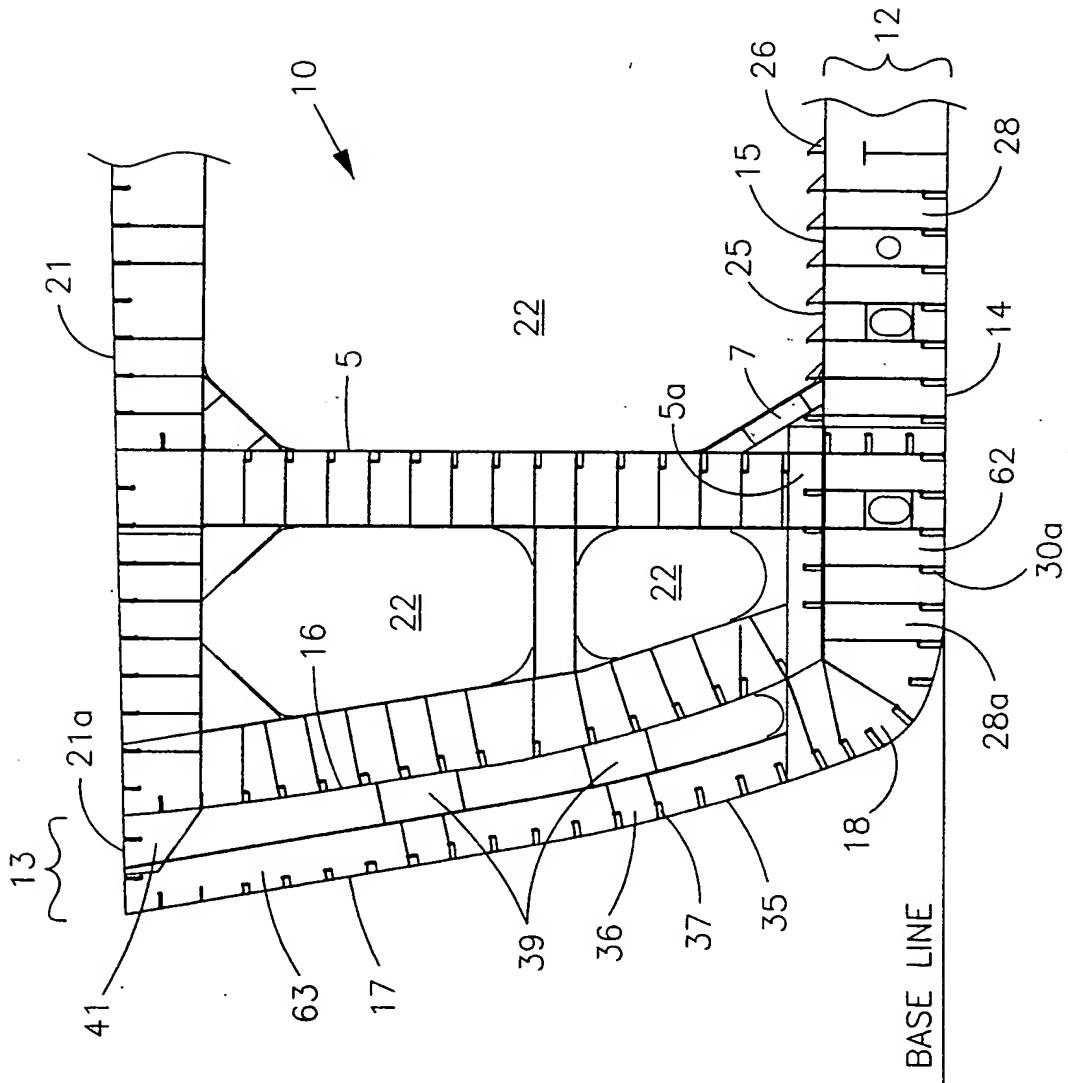
FIG. 4



PLAN VIEW

FIG. 5

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FORWARD WEB FRAME

FIG. 6

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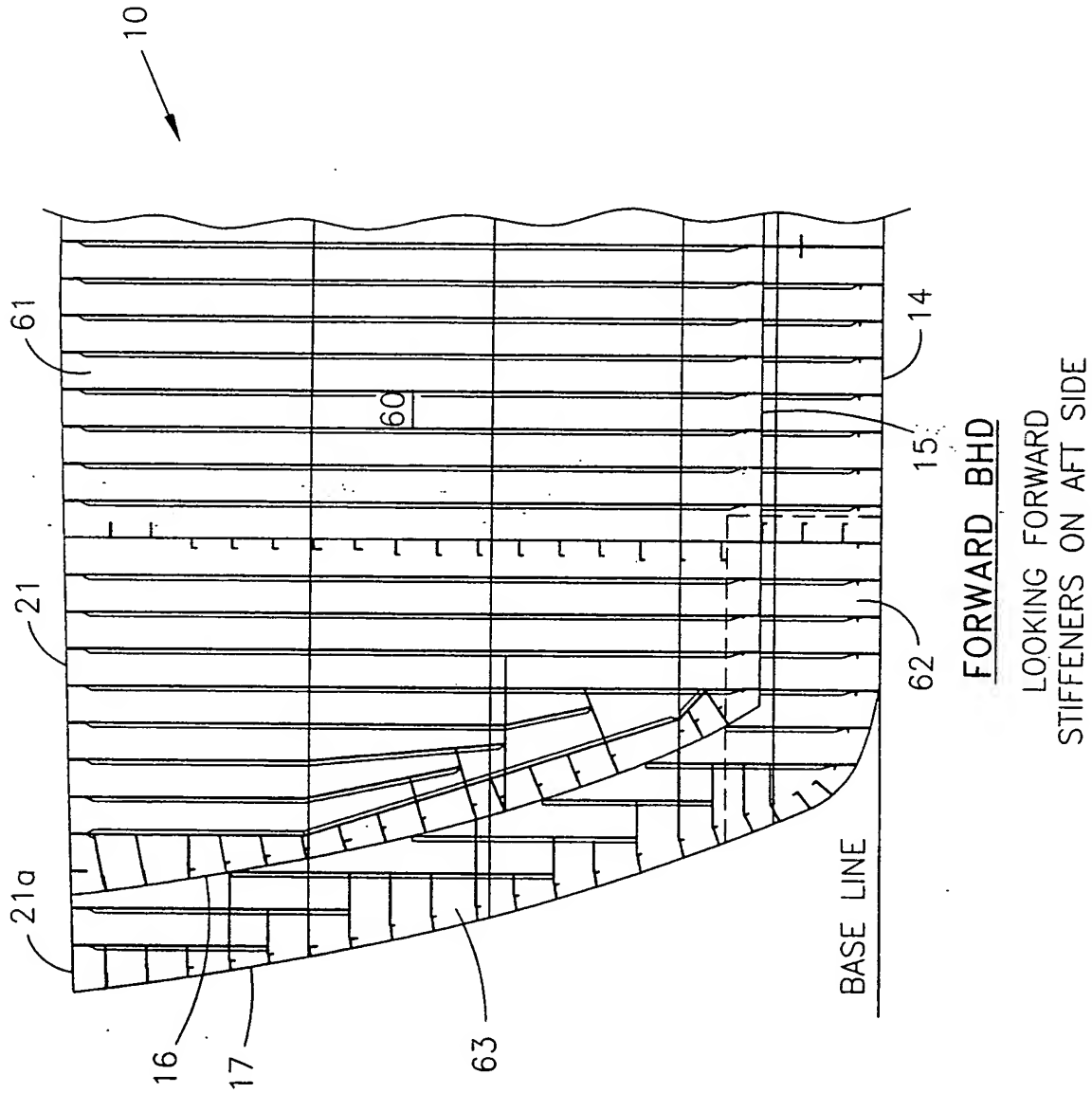


FIG. 7



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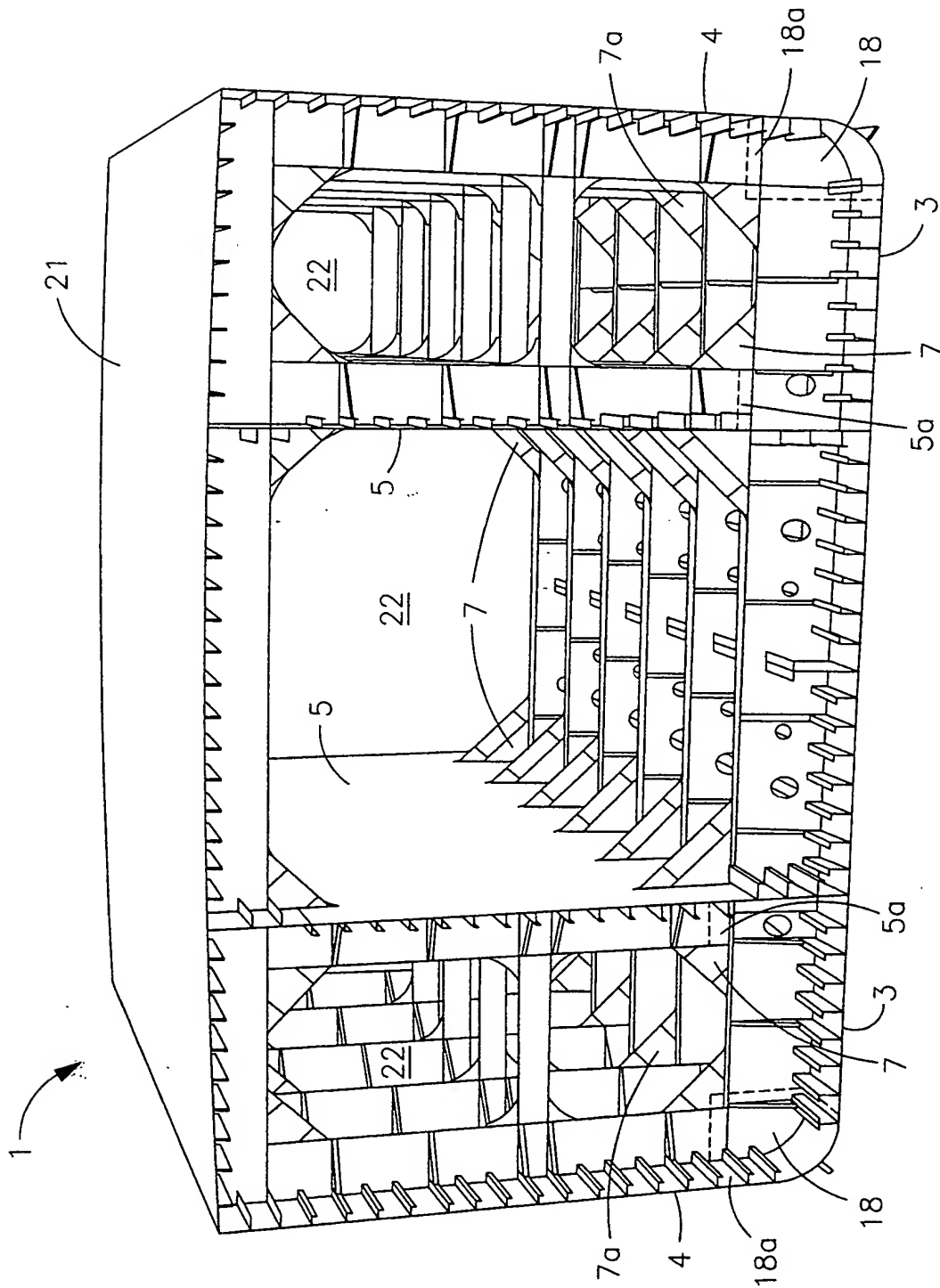


FIG. 8

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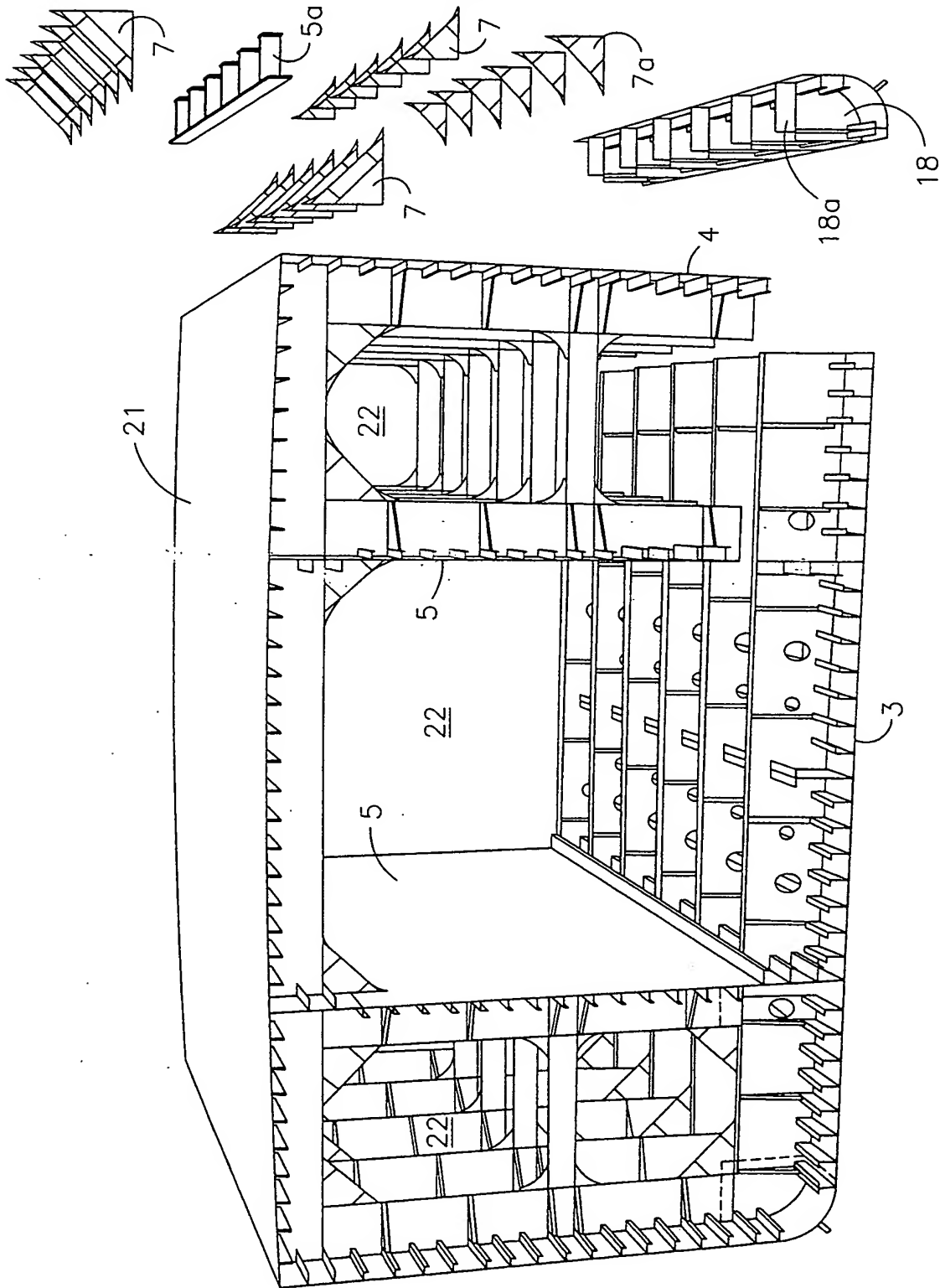


FIG. 9

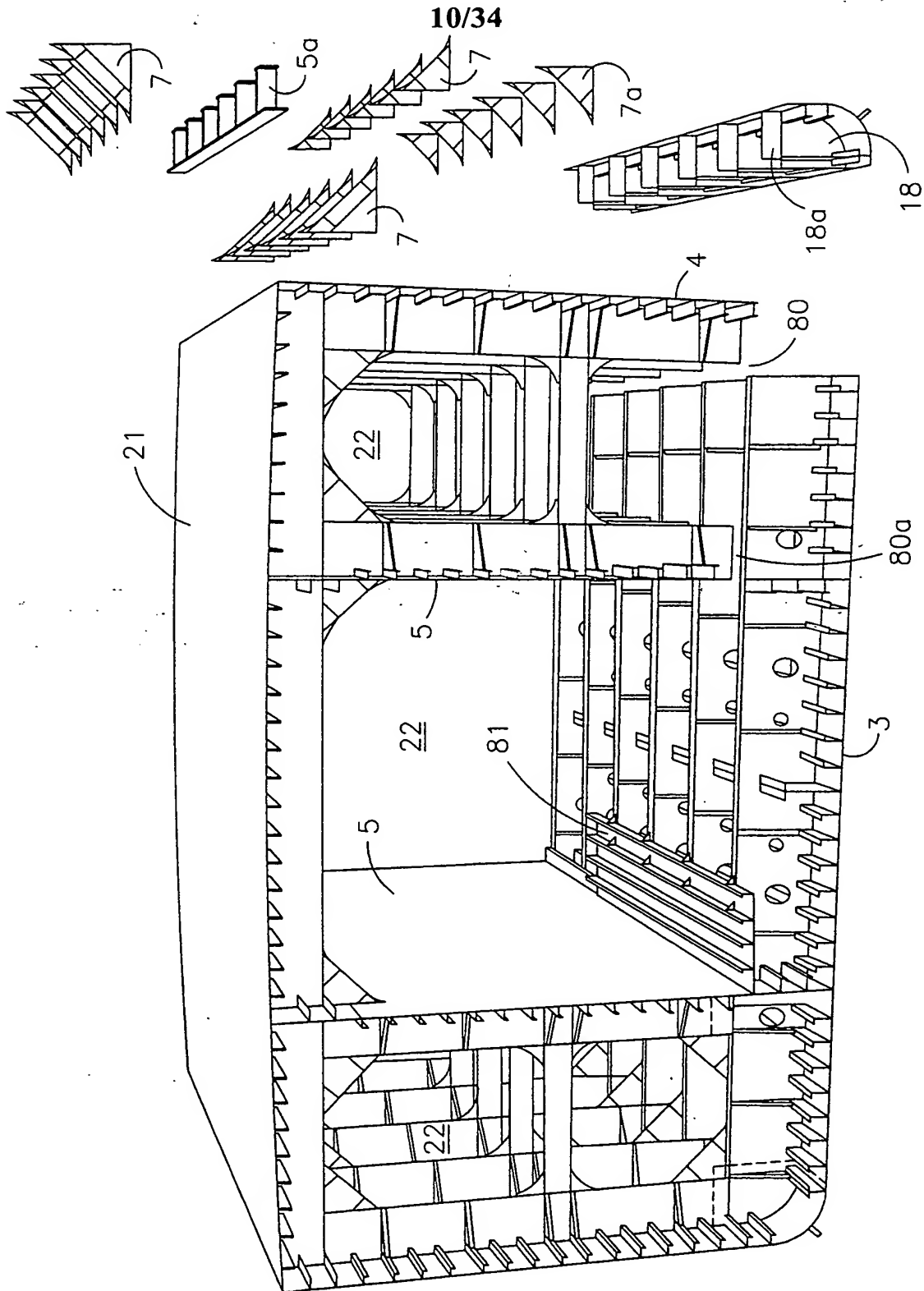


FIG. 10A

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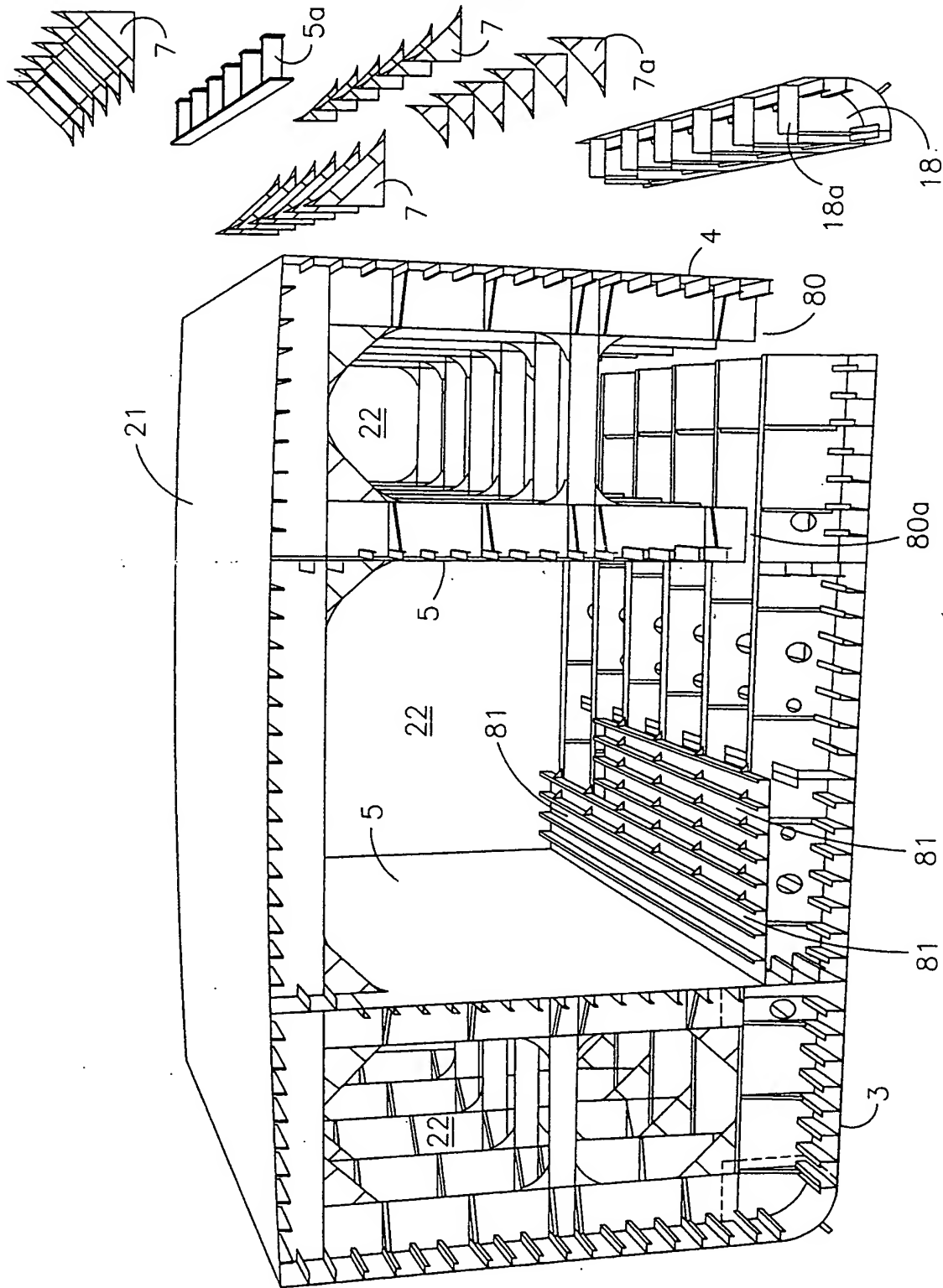


FIG. 10B

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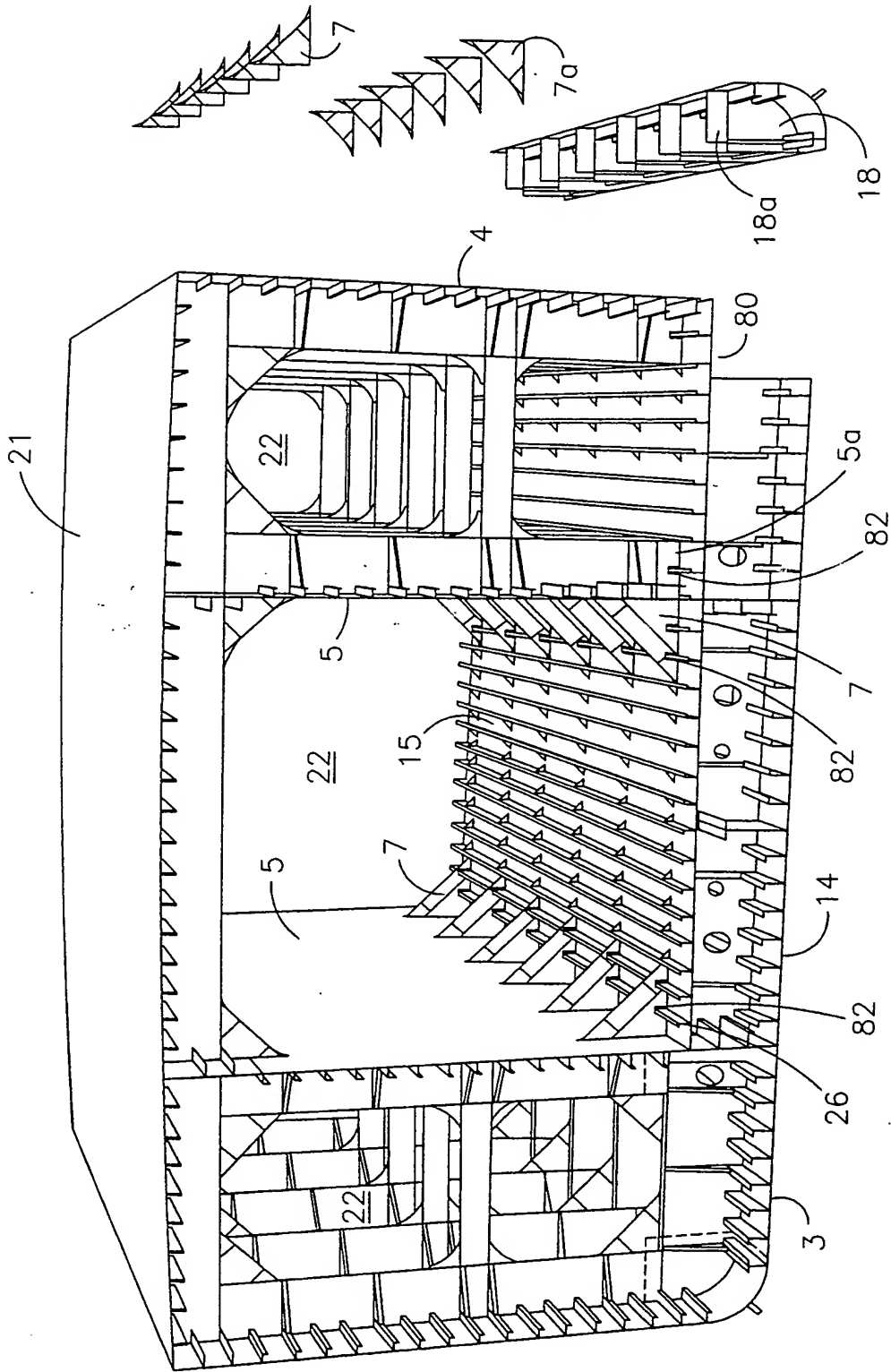


FIG. 10C

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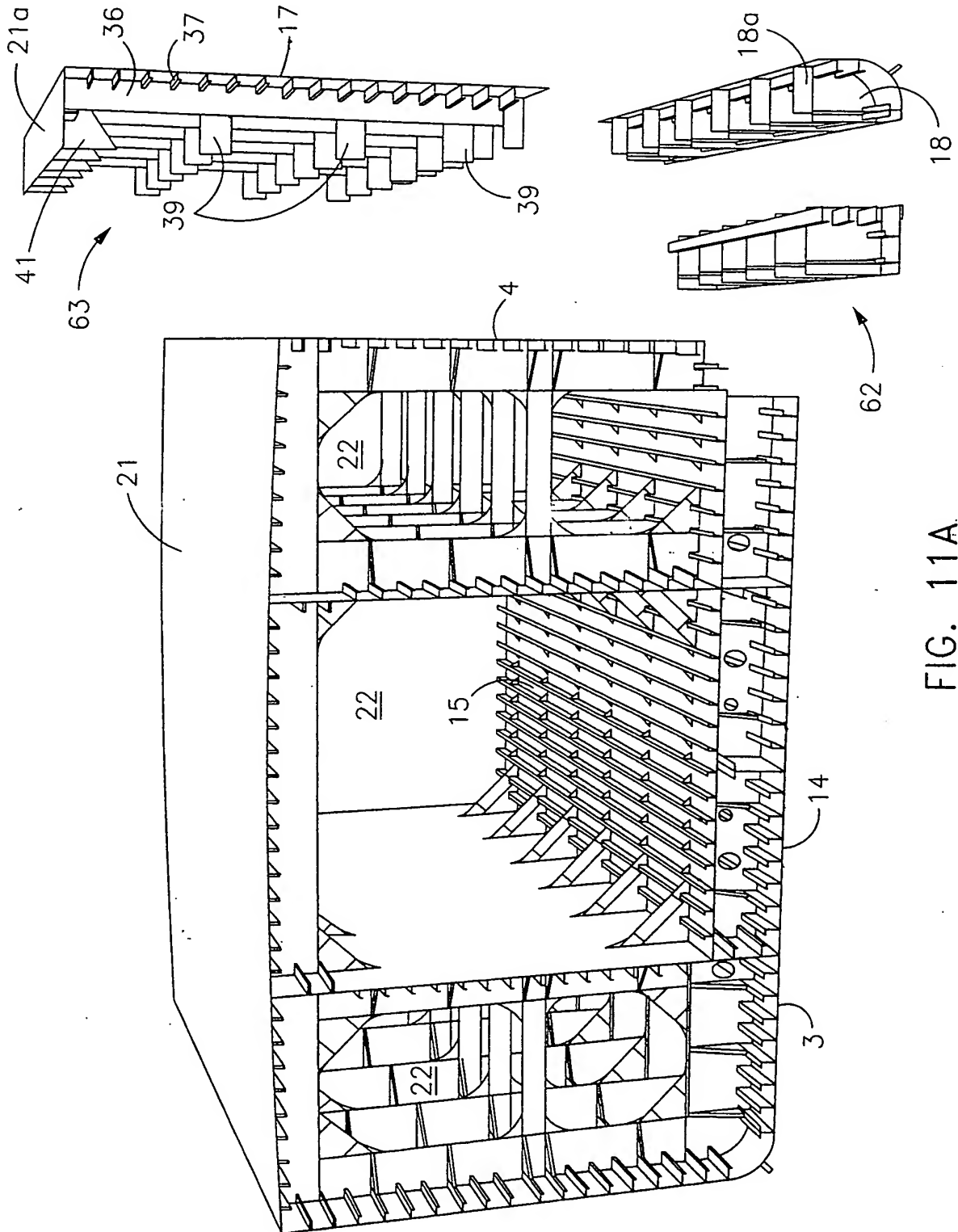


FIG. 11A

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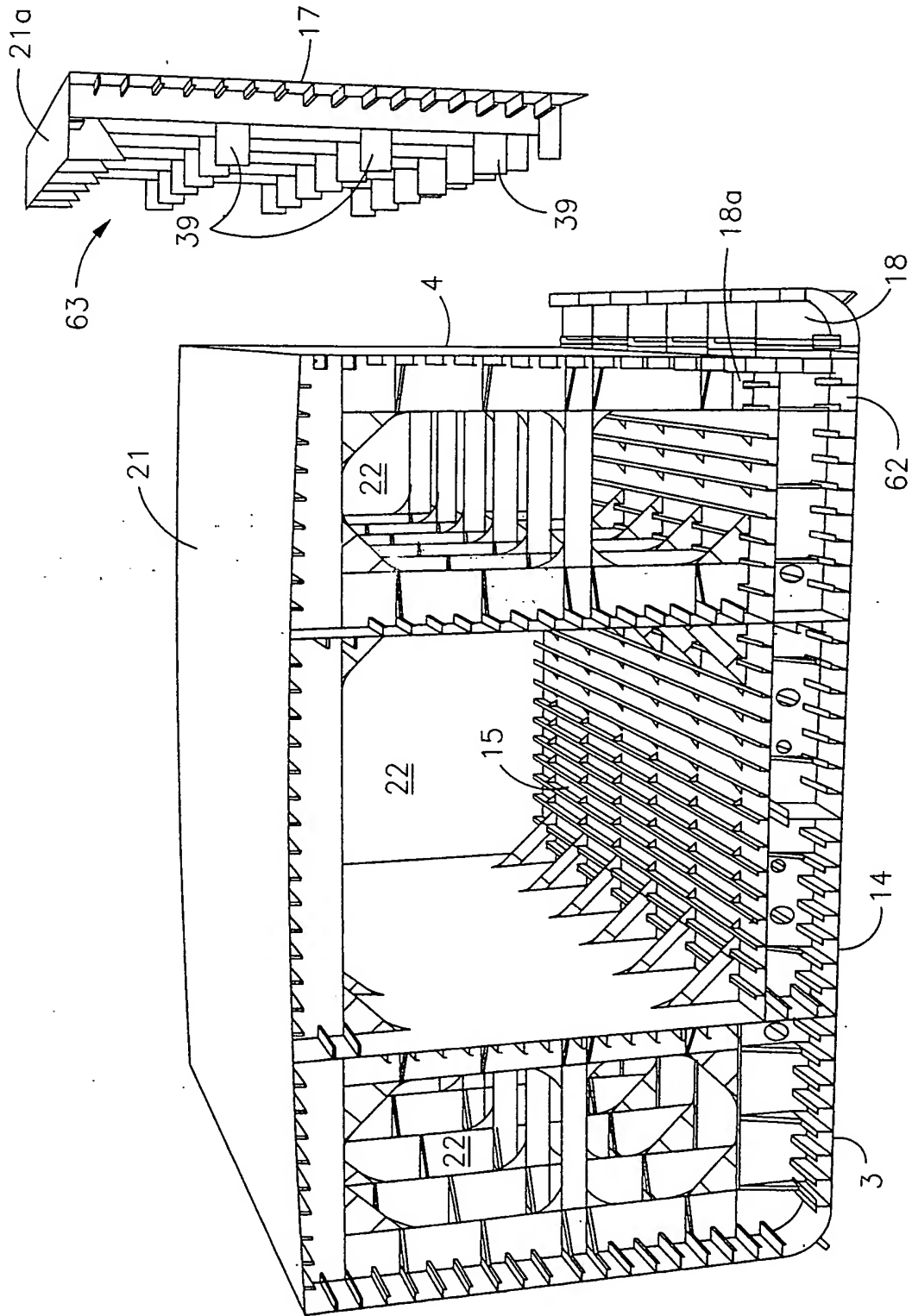


FIG. 11B

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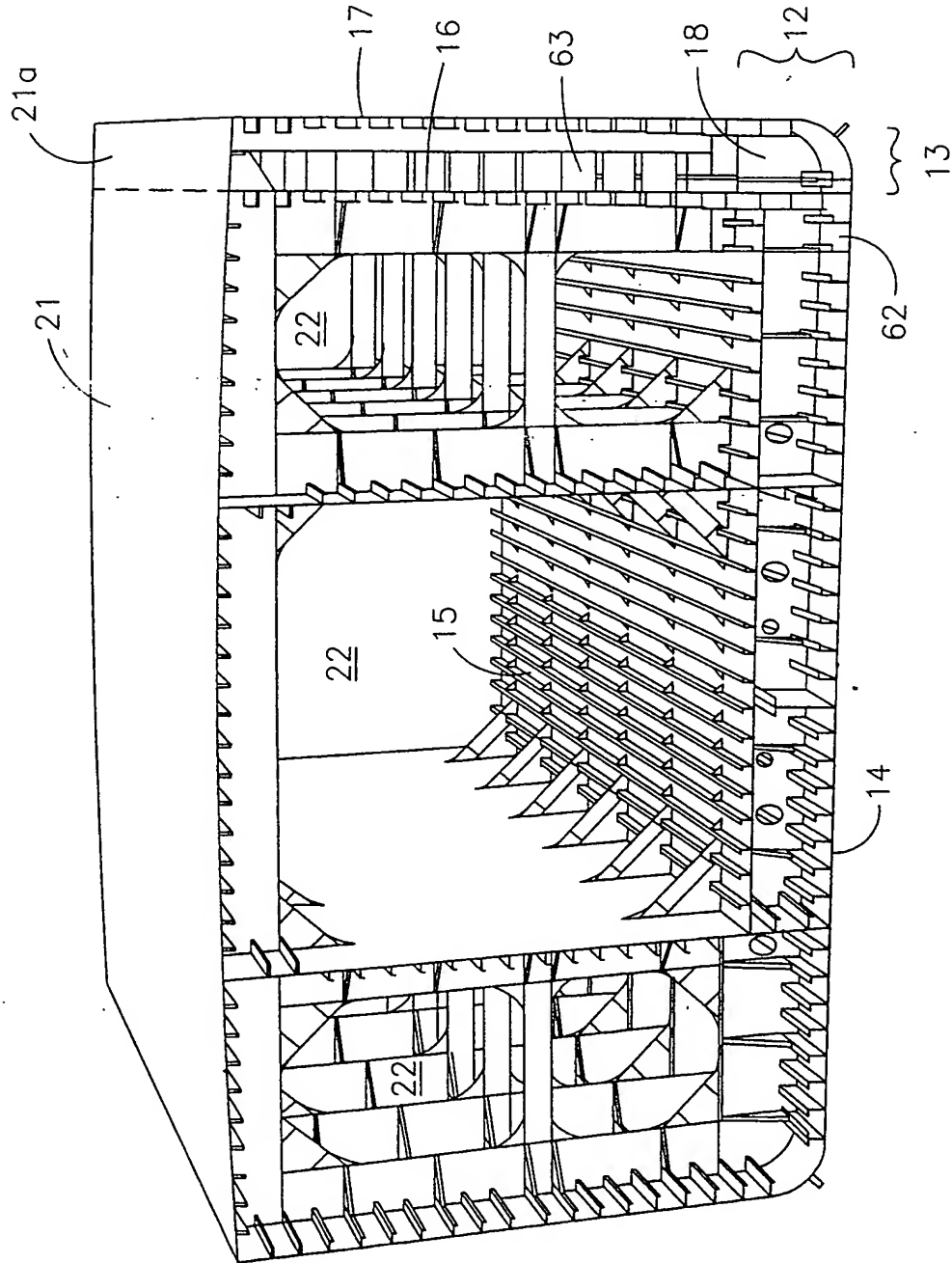


FIG. 11C



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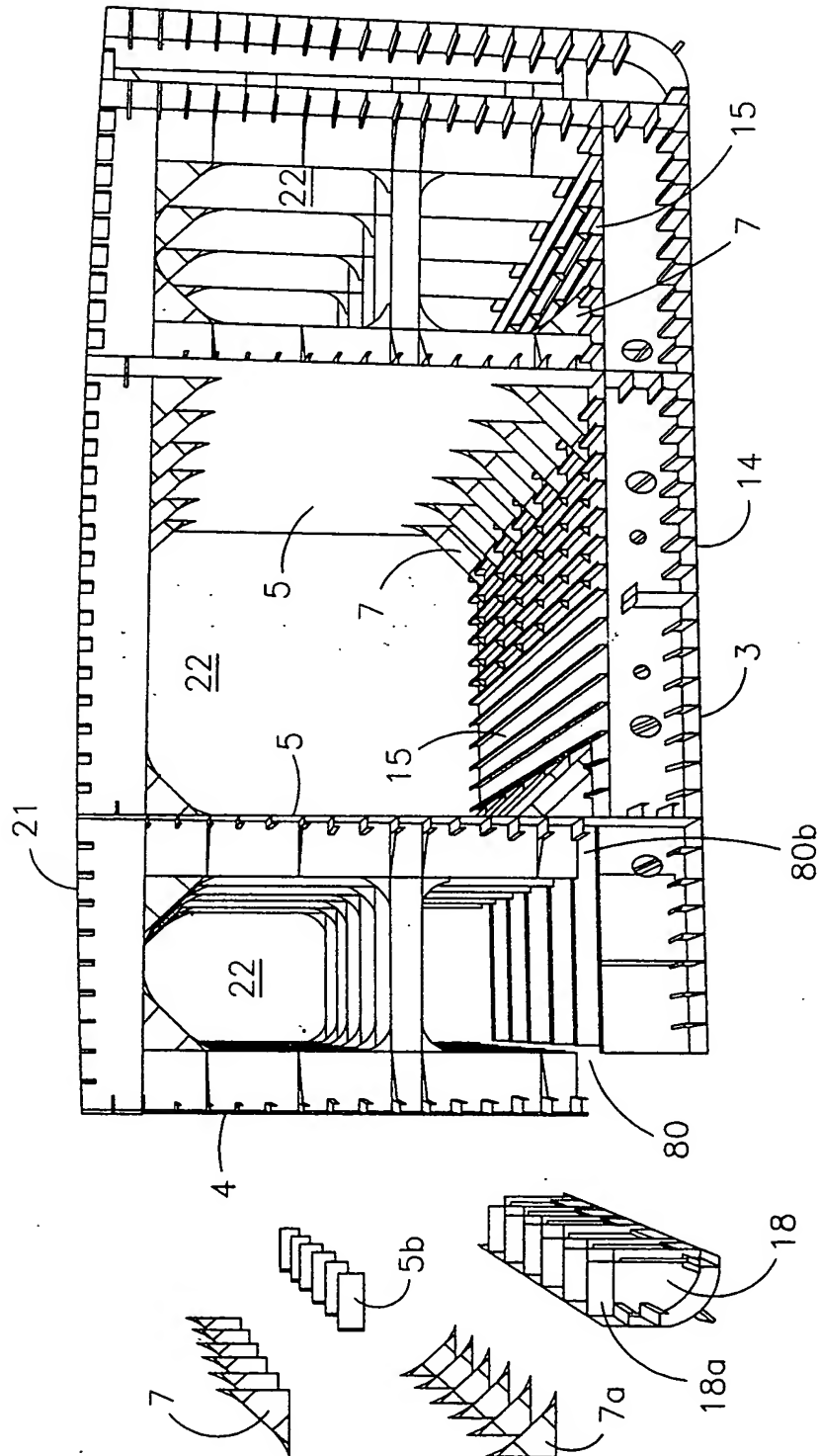


FIG. 12

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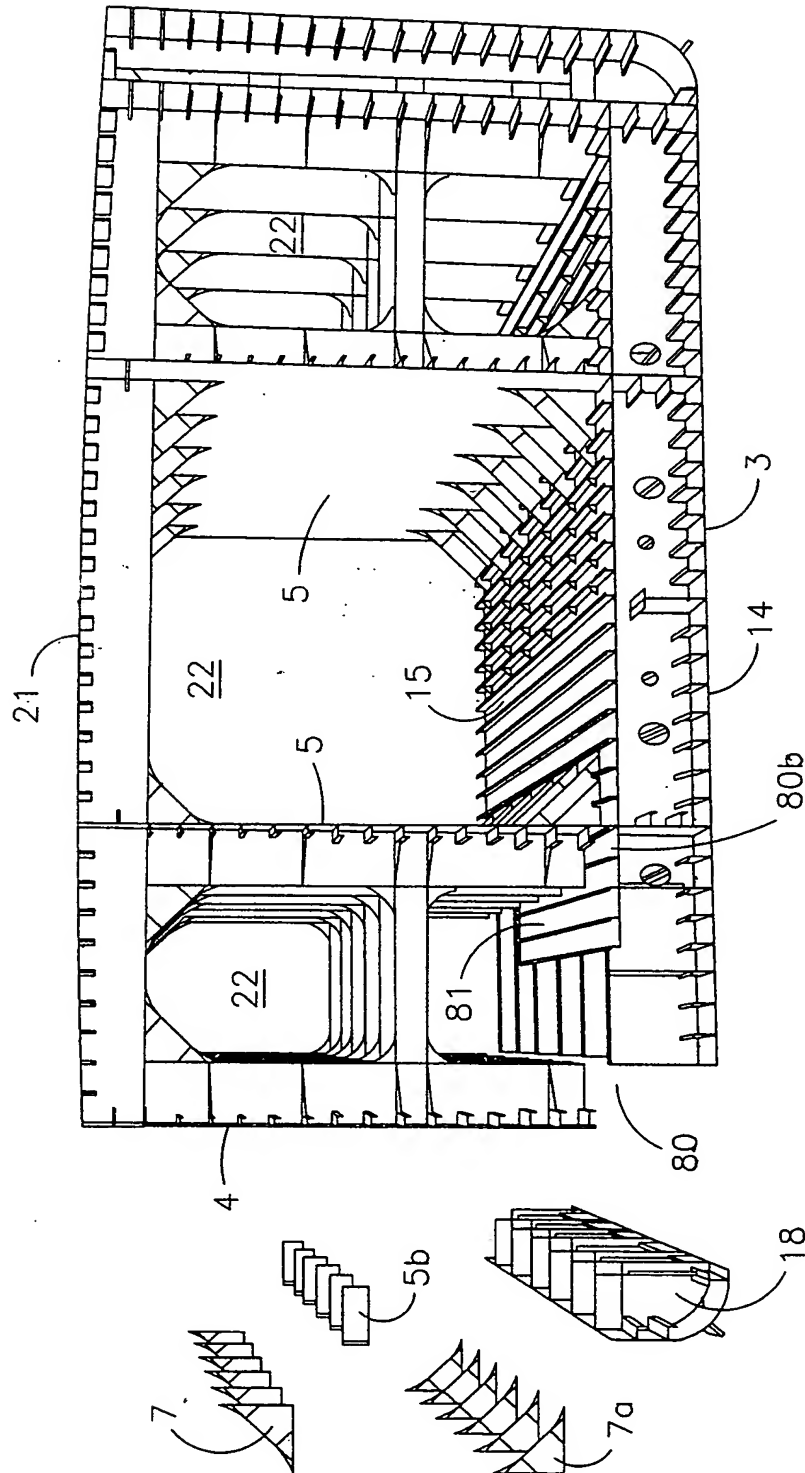


FIG. 13A

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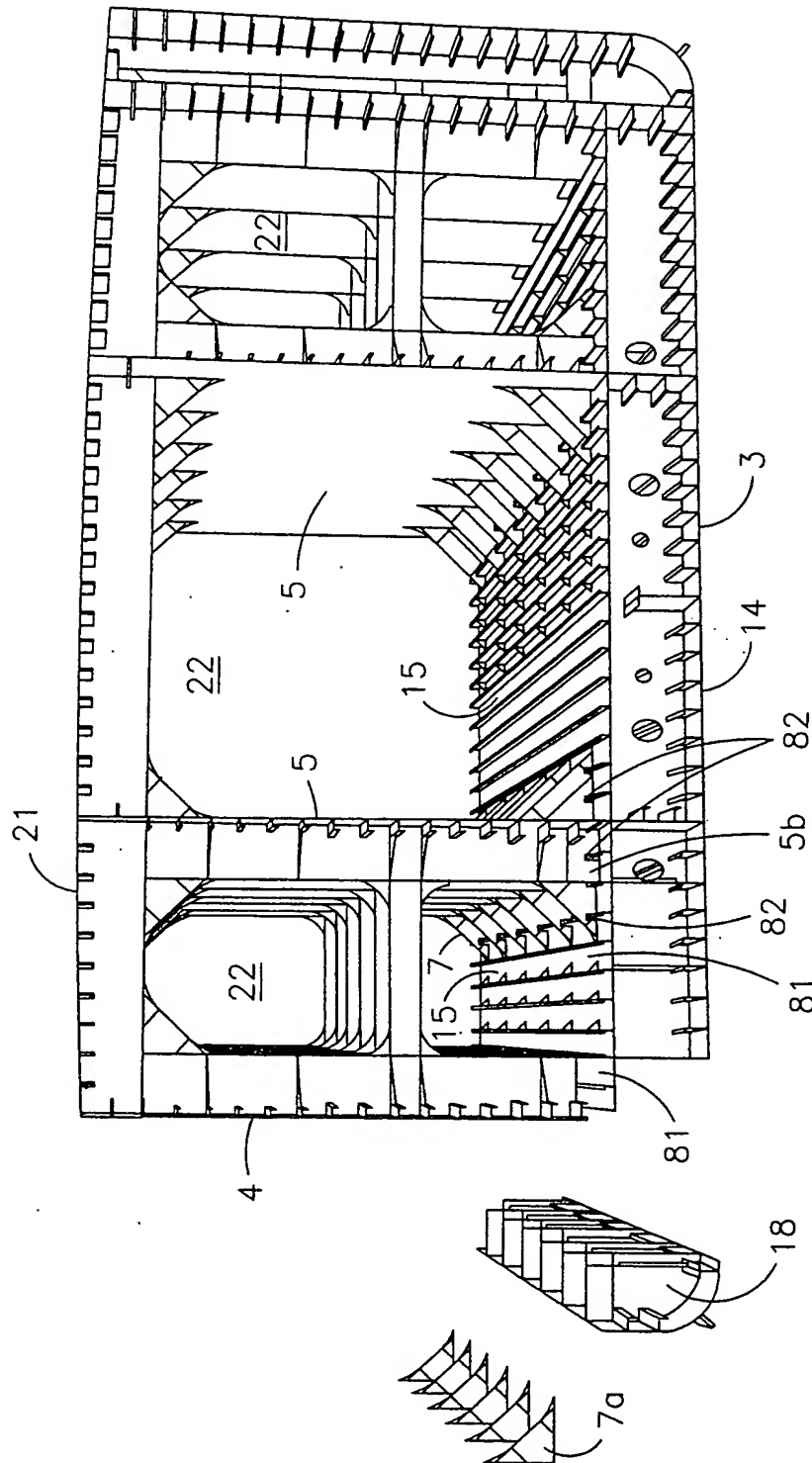


FIG. 13B

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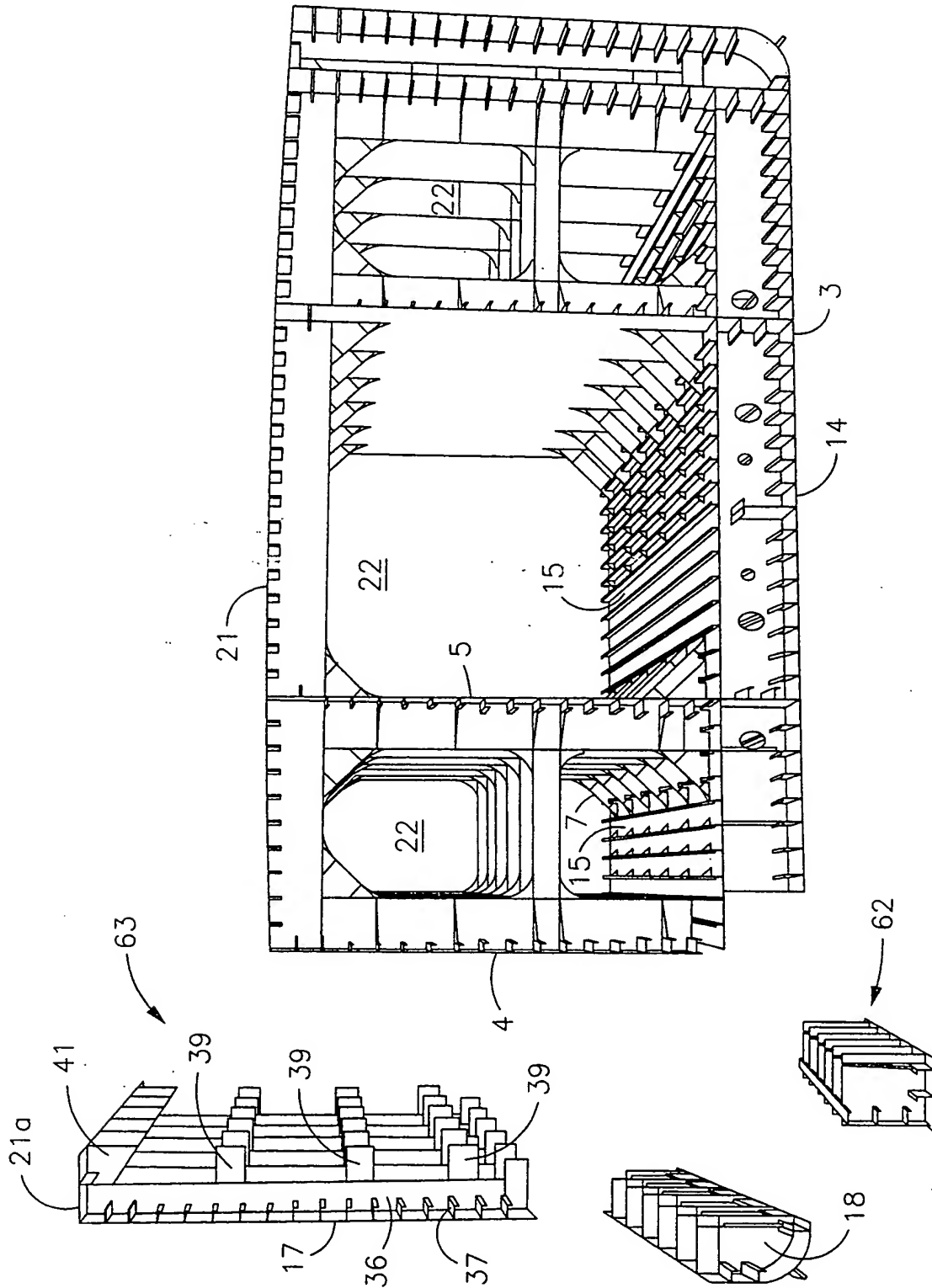


FIG. 14A

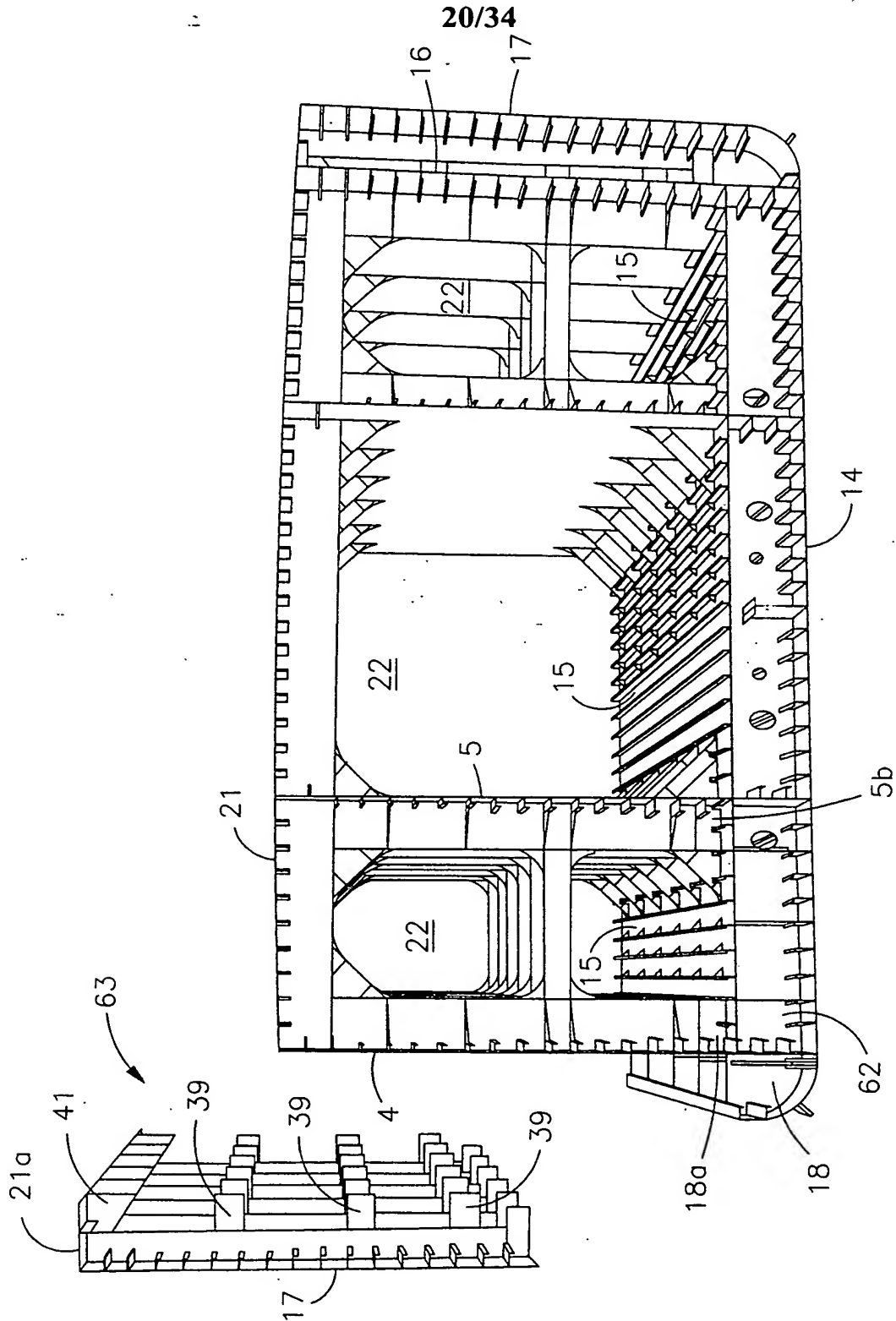


FIG. 14B

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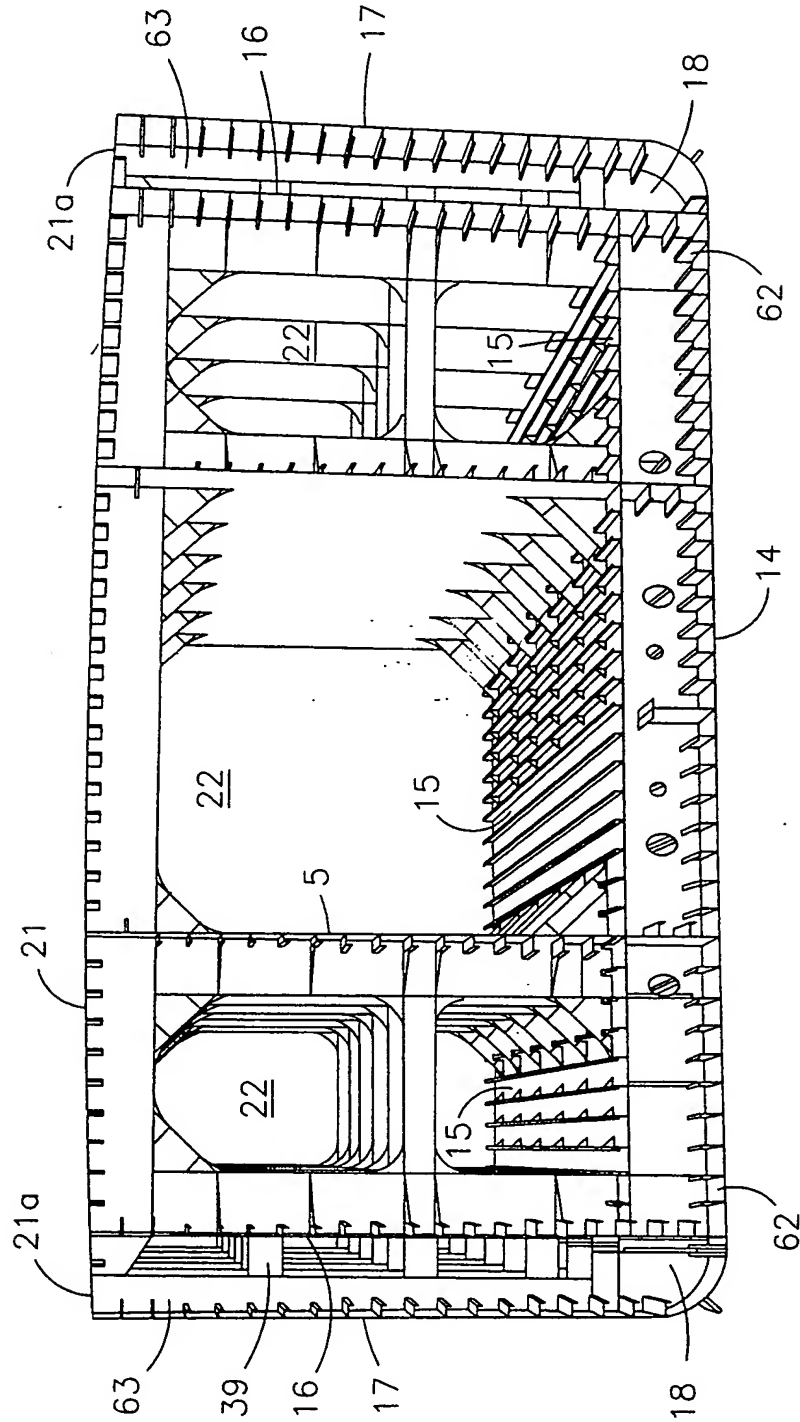


FIG. 14C

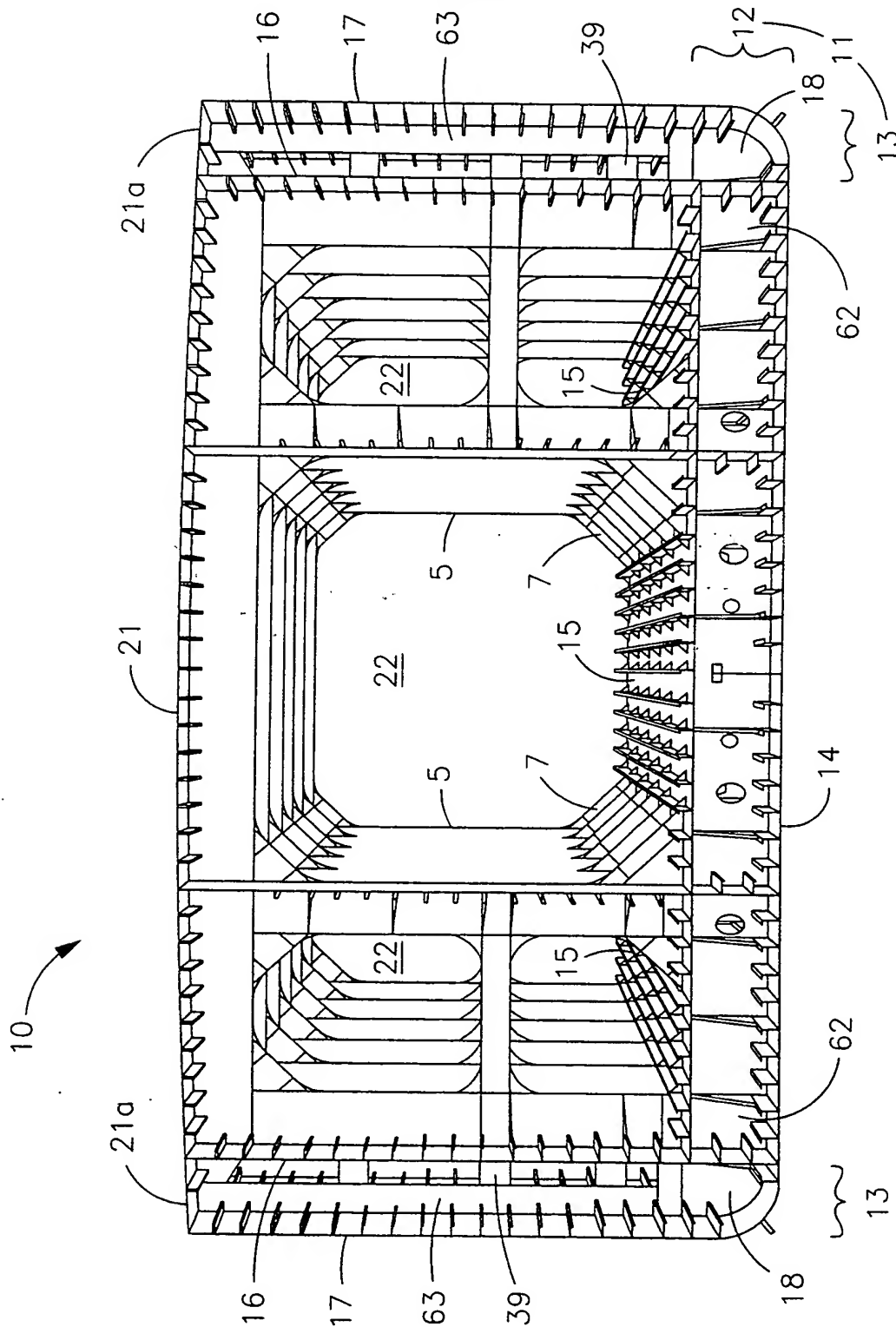


FIG. 15

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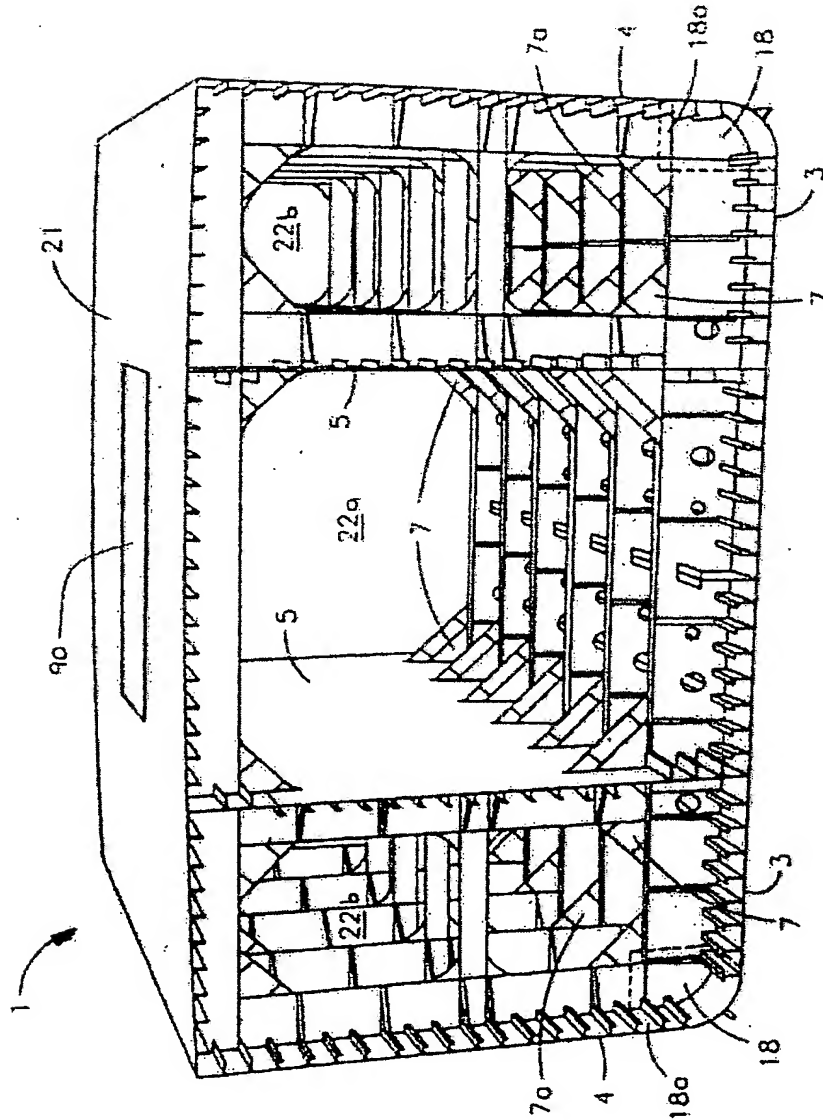
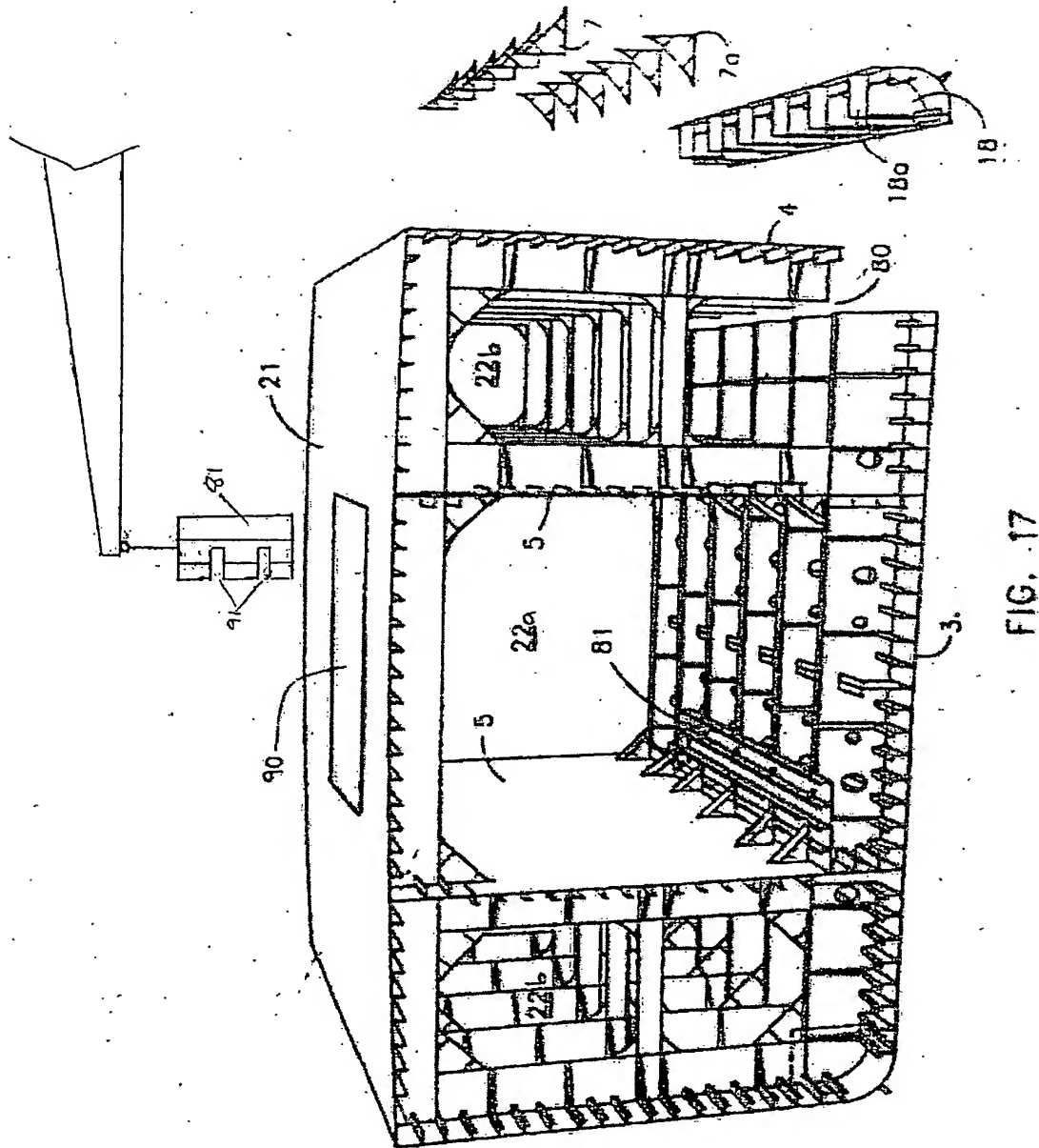


FIG. 16





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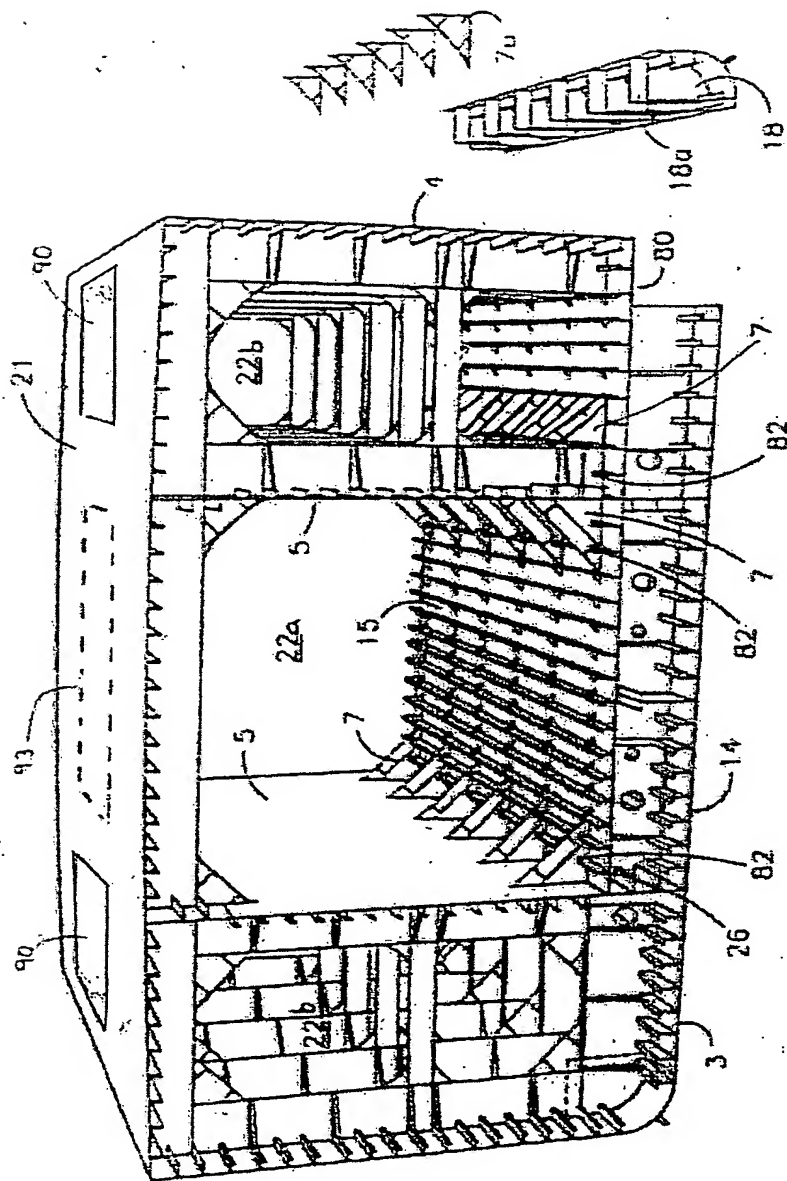


FIG. 18

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## Single Hull Lines

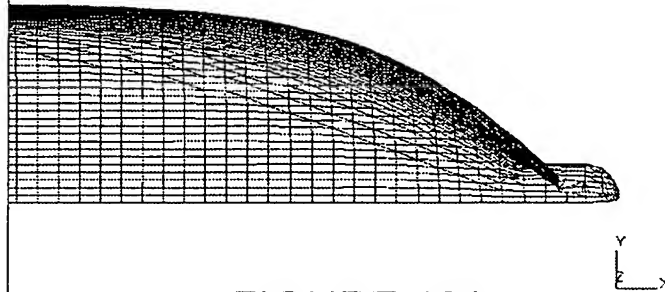
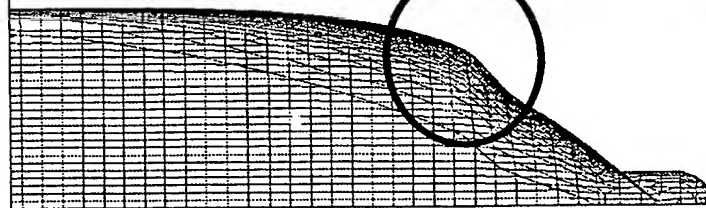


FIGURE 19A

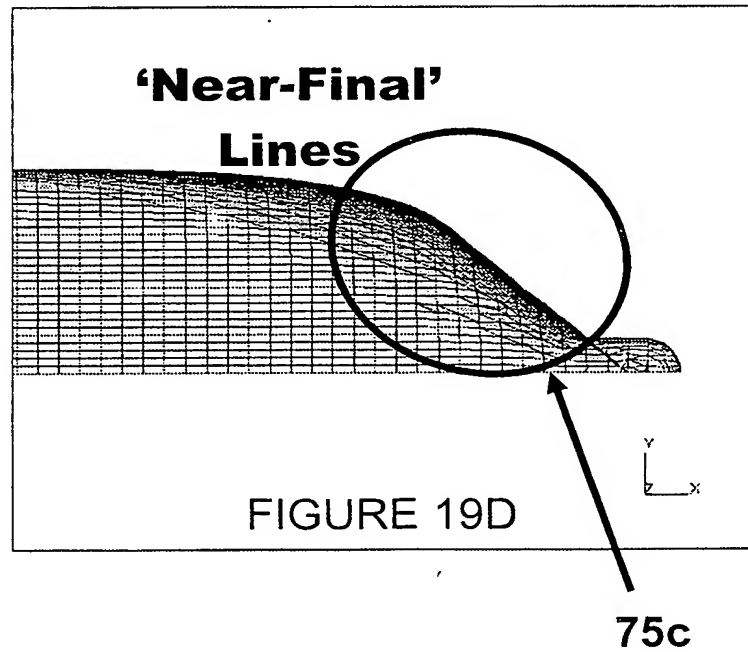
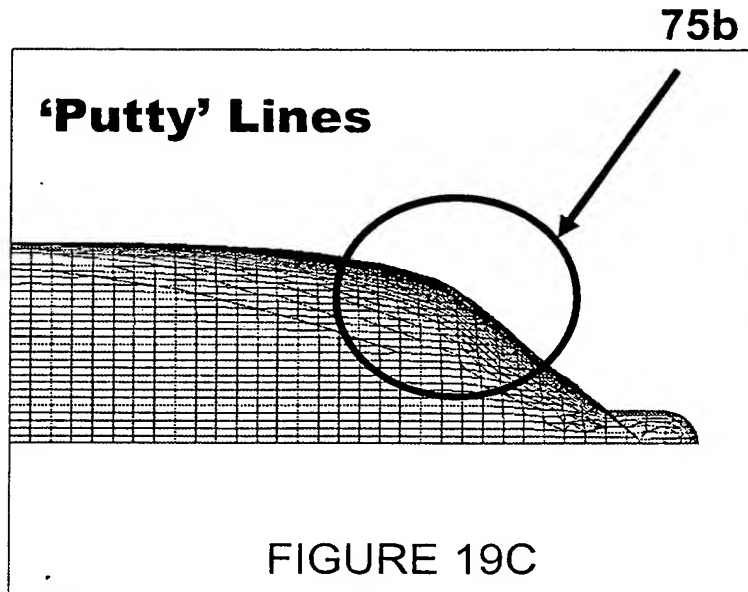
## 1<sup>st</sup> Re-built Double Hull Lines



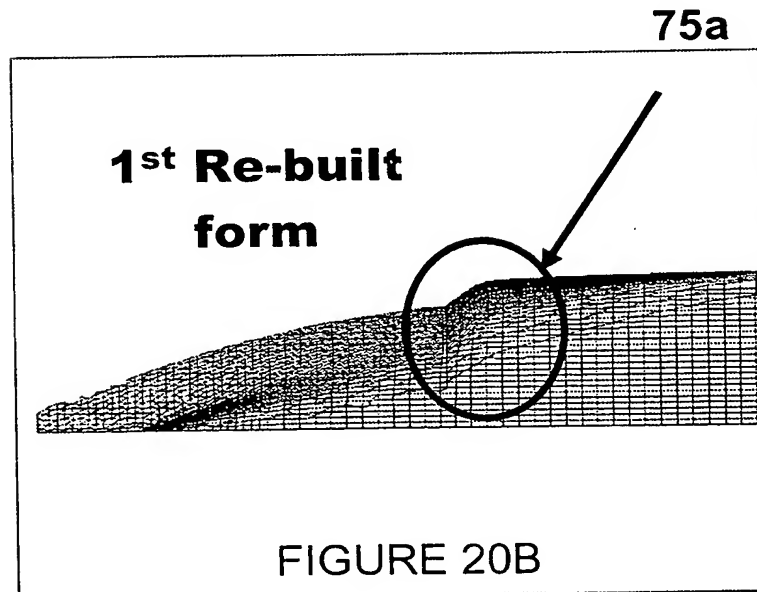
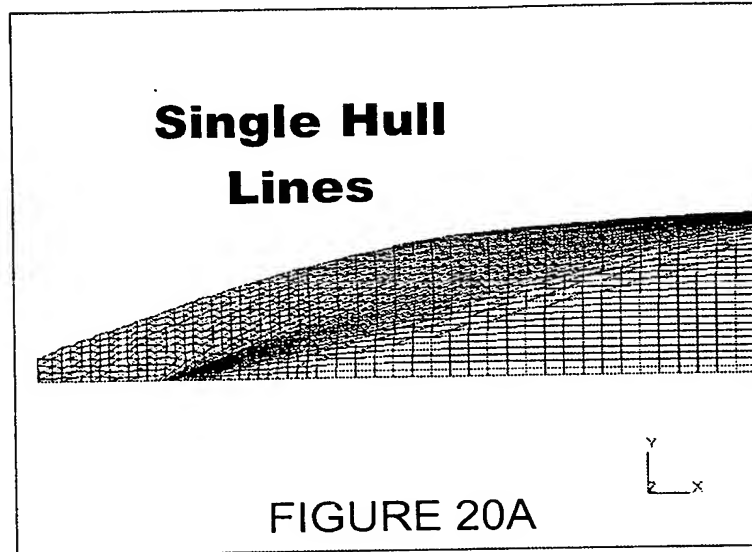
75a

FIGURE 19B

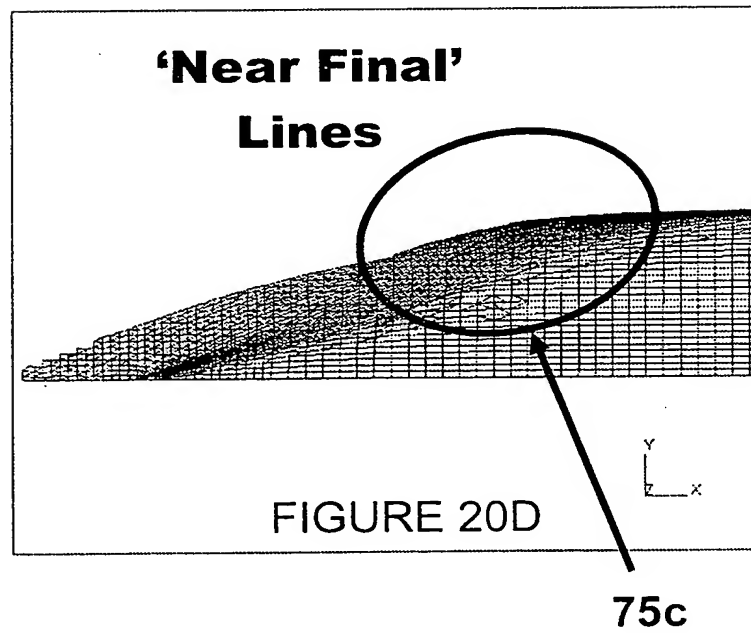
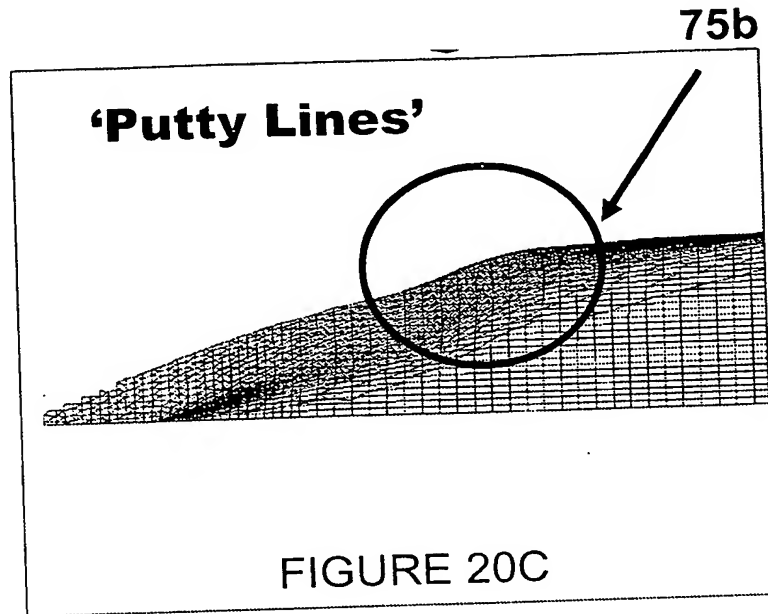
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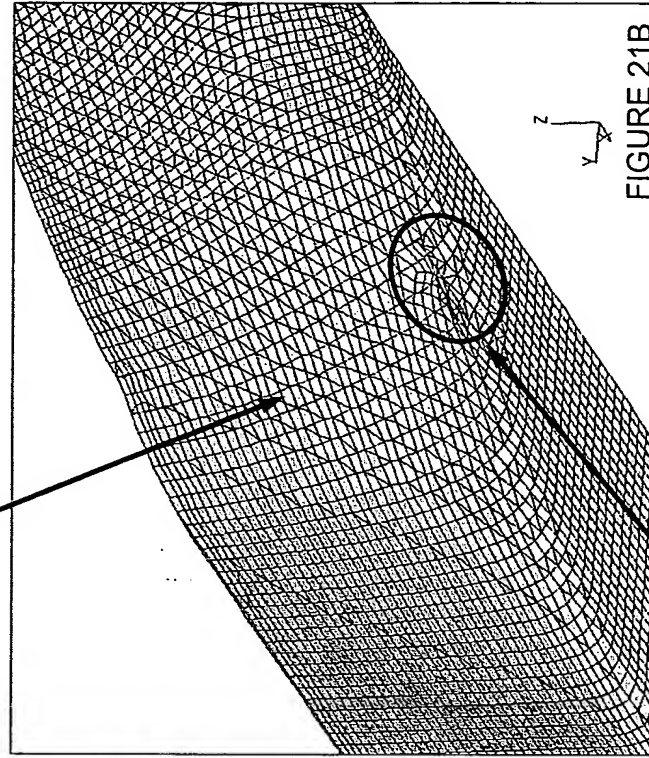
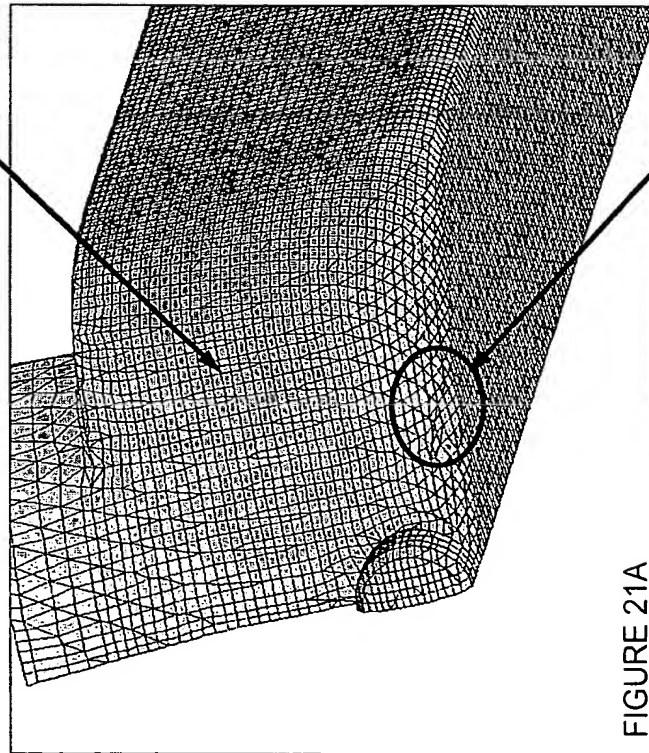
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SMOOTH TRANSITION FROM  
DOUBLE HULL TO ORIGINAL SHAPE

(75c)



ADDED PRODUCTION-KINDLY SURFACES

(92)

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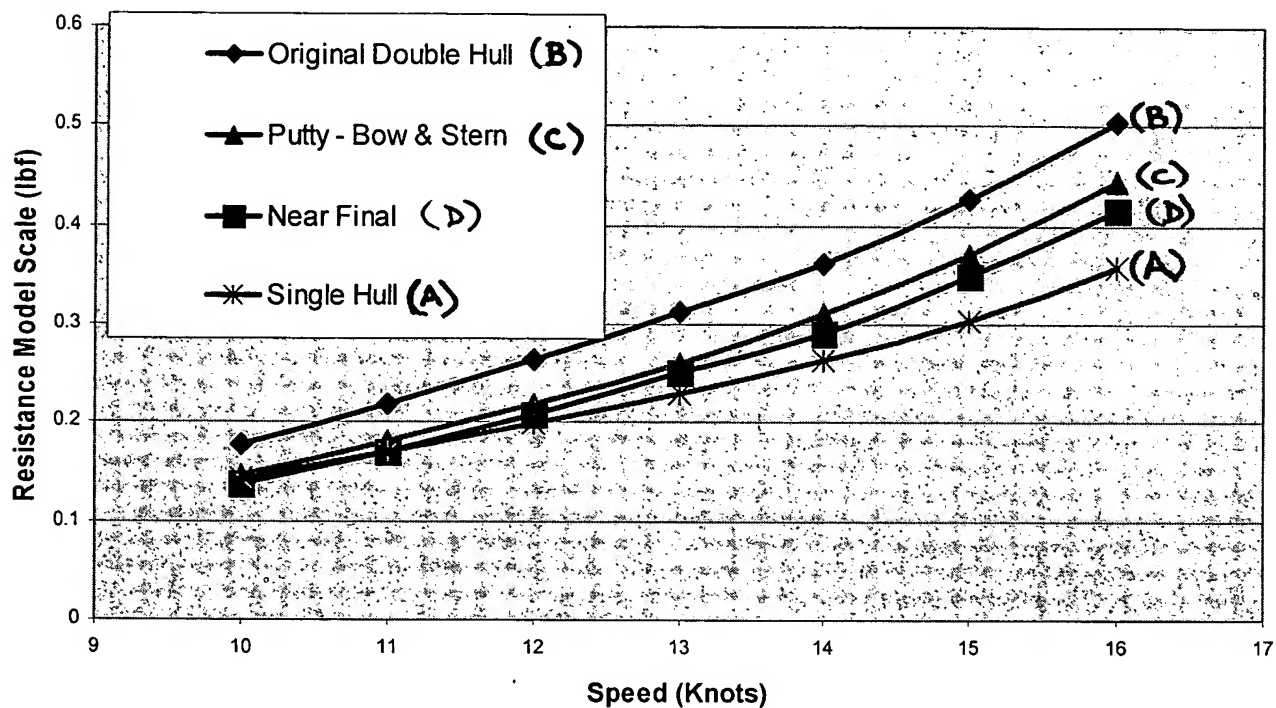


Figure 22



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## MODEL TEST

## CFD

## CALCULATION

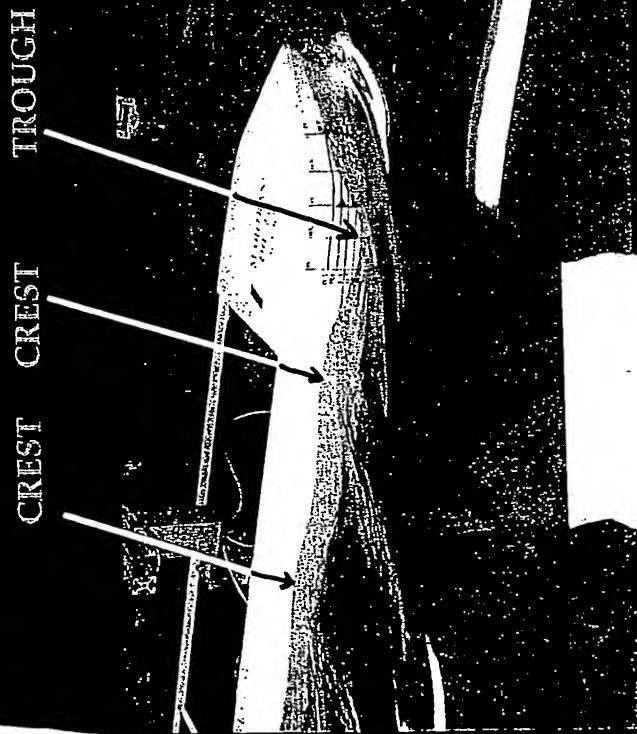


Figure 23A

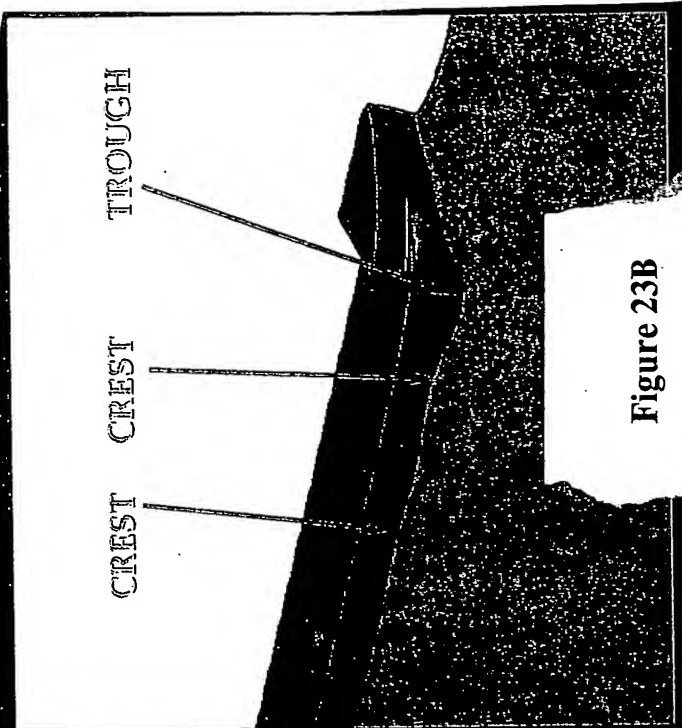
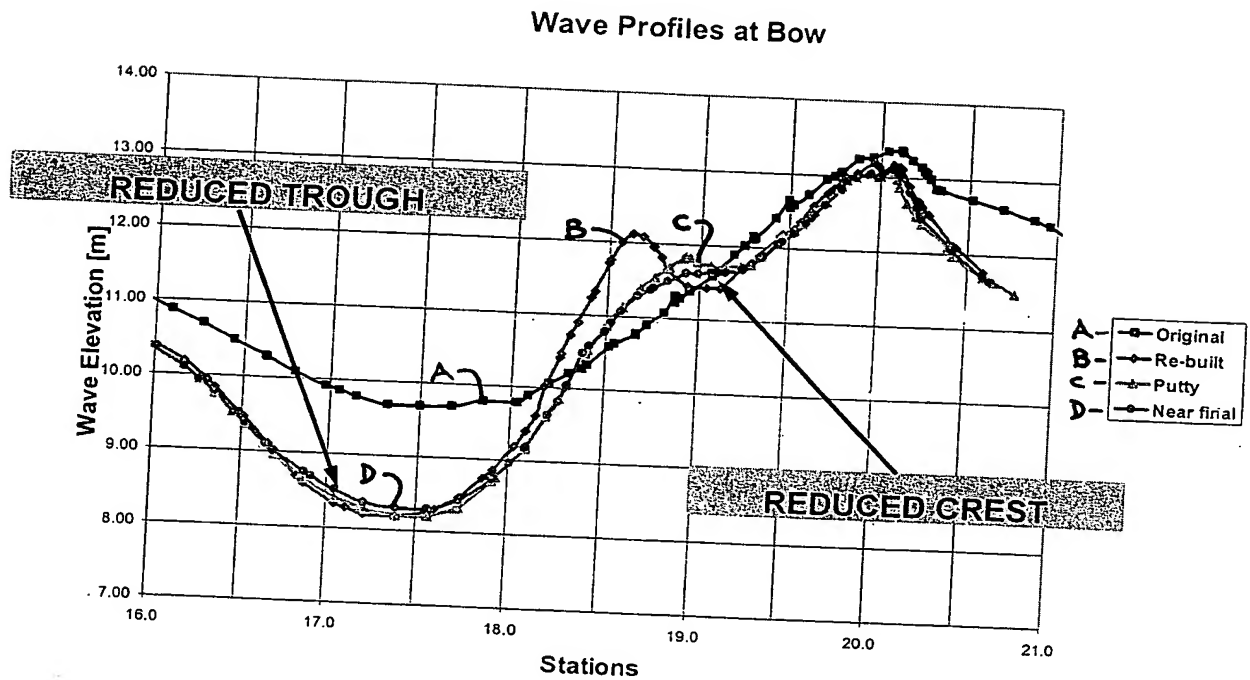


Figure 23B

Equivalent Speed: 14.5 knots

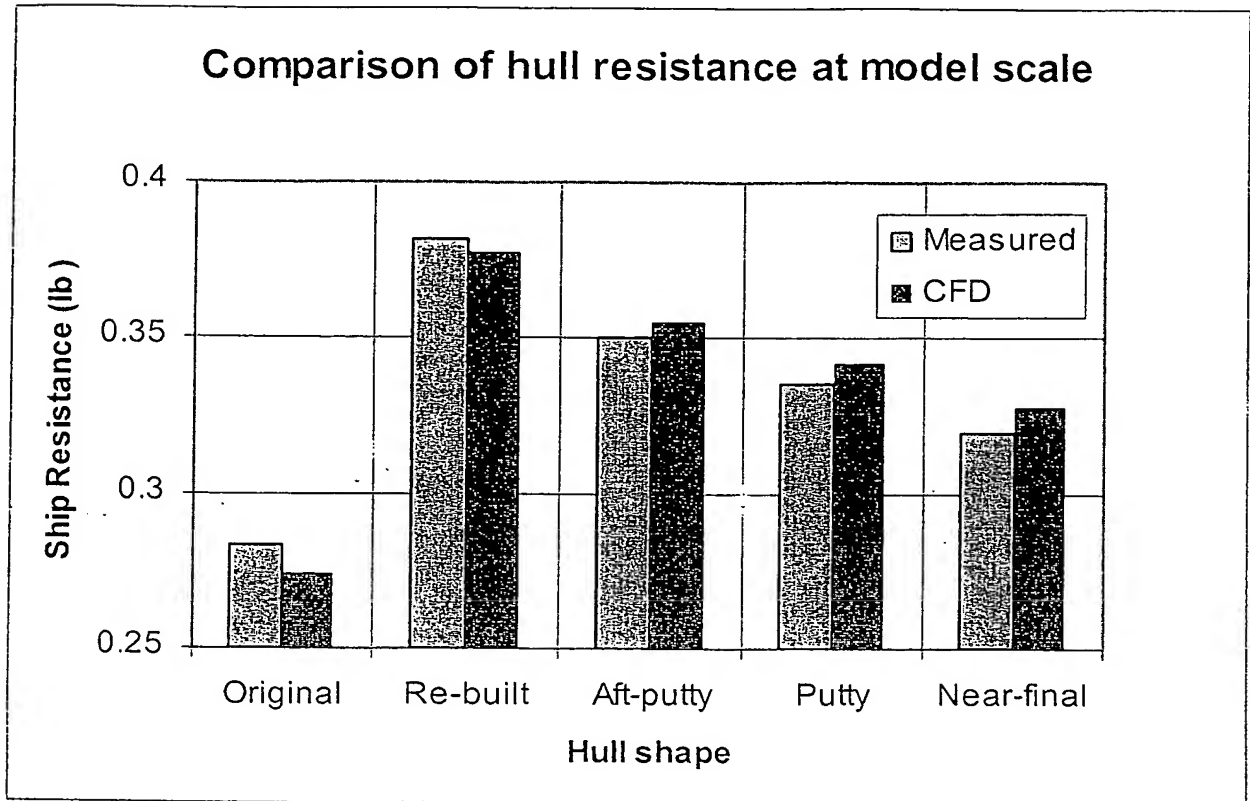
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**Equivalent Speed: 14.5 knots**

**Figure 24**

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**Figure 25**